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# Gleanings in Bee Culture

February, 1946 Vol. 74, No. 2

## Production *and* Utilization *of* Package Bees

By E. C. Bessonet

### Production Areas

The production of package bees is largely confined to the southern states bordering the Gulf of Mexico and the South Atlantic which includes Georgia, Alabama, Mississippi, Louisiana, and Texas, with California alone on the West coast. Prior to the first world war, package bee and queen production was little known and only a negligible number were used and produced. Honey producers depended on making increase to replace winter losses and expand their number of colonies. During the early '20s, the production of bees and queens began to expand until it is now well established and with many honey producers in the northern states depending on package bees and queens to maintain their number of colonies and making increase, the southern producer is in a position to supply their needs. However, during the war, the demand has been greater than the supply. This has been attributed to a shortage of skilled labor in the South and an increased interest in honey production in the North which created an abnormal demand for both bees and queens.

When the price of honey hit the 12-cent mark, several package producers either withdrew from bee and queen rearing or curtailed production to produce bees and queens for their own honey producing units in the North. This policy further reduced the number of packages and queens for the usual trade which in some instances made it impossible for the industry to supply sufficient bees and queens to meet the demand.

### Buying Policies Changed

Before the war, the majority of the package bee and queen buyers placed their orders after January and were able to obtain favorable shipping dates. After many disappointments in being able to have orders accepted and favorable dates promised, the buyers realized that something had to be done to obtain bees and queens, so earlier bookings resulted. At this time many buyers are placing their orders a year ahead and by late summer the best dates have been promised. Those who kill off their bees in the fall must have their orders already placed with a reliable shipper, otherwise they would be taking chances of not being able to produce a crop the following year.

The bee shippers have been placed in a favorable position as a result of having their orders booked far ahead, as they are able to make their plans for a definite number of packages and queens. It will be to the mutual advantage of all concerned to continue with this policy in peace time, as the buyers will enjoy a certain peace of mind after their orders have been accepted. The bee producer will likewise feel se-

Subscription Price—1 year, $1.50; 2 years, $2.25; 3 years, $3.00. Foreign, 25c additional. Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly.

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cure in the thought that he can proceed with his plans of producing the number of packages and queens accepted far in advance.

**The Buyers' Responsibilities**

Buyers have definite obligations towards the producer in that a cooperative spirit should exist to enable the producer to give good service. This is achieved by placing orders as early as possible, making remittances before the shipping date, giving an intelligent report to the express agent as to the cause of losses in transit, returning dead queens intact in their cages, and writing to the shipper when one is pleased, as well as when one is displeased. Remember that we are human and appreciate an occasional good report. The average shipper is striving to please and wants to know whether or not he has fulfilled his obligations towards his customer.

When the bees arrive in bad condition, many buyers make statements to their agents which are damaging to the shipper and when such receipts are used for adjustments, the shipper is unable to recover the loss. The shipper is willing to accept losses which can be traced to his neglect, but when it is the fault of the carrier, he certainly wants to recover his loss. Many buyers do not understand the causes of losses in transit, so I shall explain how bees are affected by exposure to heat and cold.

If bees arrive wholly or partly dead and the dead bees appear to be wet, the cause is overheating. When they are dry, the chances are that they died of starvation, or by undue exposure to cold weather. In the event that they appear to be dry, check for feed by shaking the package to determine if feed is left in the can. If there is still feed and the feeder holes are not stopped up, then the bees died from cold. It is well to point out that it is impossible to drown bees in the cage, as some report when they have noticed that the bees appear to be wet. If the cans should leak, the syrup would just run out of the cage and this would have no ill effect on the bees unless they starve, and should this occur the bees would be dry and not wet. Unless one is in a position to determine the cause of the loss, he should just state that the cause is undetermined and this will make it possible for the shipper to collect damage. Bees can stand a lot of punishment in transit, but lack of ample ventilation caused by overcrowding packages enroute is no doubt the cause for the majority of the losses.

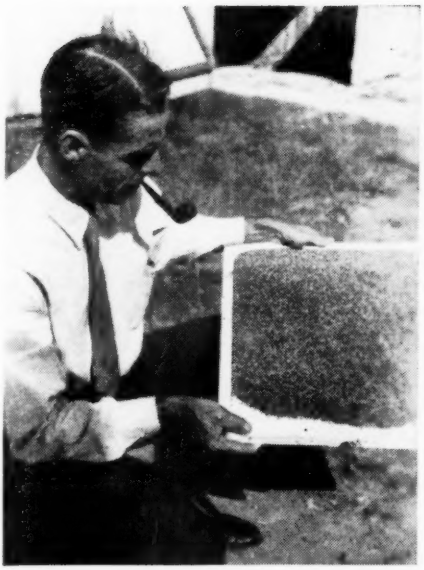
**Responsibilities of the Shipper**

The bee shipper's obligations towards the buyer are greater than the buyer's toward the shipper in that his responsibilities are more complicated. In relating the shipper's ethics and problems with his obligations, we find that several factors contribute to delays, poor packages, and unsound business policies.

**The reliable shipper's aims and objectives are quality and service.** Under ordinary conditions, the shipper is able to determine his potential production in the fall which places him in a position to accept orders according to future prospects. It is unwise to book to full capacity, as we should anticipate production difficulties during the spring. The reliable shipper books to about 75 percent of his potential capacity and during the spring accepts additional orders to take up the surplus if any has developed. This is the only way in which a shipper can give reasonable service and prevent undue delays in filling orders.

The buyers feel justified in expecting good service and when serious delays occur, they realize that a part of their honey crop will be lost. Replacements quite frequently interfere with the shipper's schedule,

Billy Bessonet holding a pollen trap.



E. C. Bessonet holding a tray of pollen which has been sun dried and is ready for packing.

but he must replace losses with the least possible delay. It is impossible to anticipate losses and when they will occur. The buyer expects the shipper to ship promptly. All, I am sure, are doing their utmost in taking care of adjustments.

**The Package Bee Colony**

Equipment for package colonies varies according to conditions in various localities. In some areas, a single one-story colony is used in the production of bees, but in general a two-story colony is found to meet the needs of the shipper. When a single brood chamber is used, the queen has to be found and bees shaken into the packages. It is a difficult matter to restrict the drone population and in view of this fact precautions should be taken to ship only worker bees by screening out the drones at the time of filling packages. This is achieved by the use of a funnel with an excluder box which fits inside the funnel.

The use of a two-story colony makes it possible to use queen excluders and by giving the colony a few puffs of smoke after raising the hive cover, only worker bees will be shaken from the top super. This method not only screens out drones, but virgins also, as many colonies will have both mother and daughter at the same time and it is impossible to determine which colonies have two queens. The shipper should by all means supply only worker bees, as drones add weight, thus making the package less valuable to the buyer who is paying for worker bees. It is needless to state that buyers are usually critical about the type of package they buy and if the shipper fails to supply packages with worker bees only, then the buyer is willing to try another source hoping that he will receive better packages.

In addition to droneless packages the age of the bees in the package has a considerable influence on the development of the package colony. In a well planned program of operation, the bee shipper will supply young worker bees if the bees which are put in packages are produced in his own yards. Shippers who buy the bulk of their bees from beekeepers whose colonies were not shaken regularly prior to the time bees are removed for packages will have a considerable number of old bees.

This is also true with the shipper who does not p r o d u c e his own queens and lets his hives remain unshaken until the package season gets under way. It is the continuous shaking of colonies to stock queen nuclei which produce more young bees and these are more desirable to develop colonies. The buyer quite frequently finds the death rate very high in his package colony during the time when bees are installed and young bees start to emerge. This is largely the result of too many old bees, but damage to bees enroute can shorten the life of the bees and cause a severe shrinkage during the critical period of getting the colony established.

It is easy to understand that the progress of the package colony will be determined by the age of the bees, pollen, and honey, or sugar syrup. Unless we can maintain a fair balance between food reserves and the age of the bees, the colony will lag behind in its development.

We can understand why s o m e honey producers in the same areas can obtain larger crops than the average, as he gives his bees the proper attention, while others adopt a plan of letting the bees shift for

themselves and then blames the shipper for his poor results. The queen has a vital role in the development of the colony and the better the queen the greater the crops when good management is practiced and the locality affords good nectar sources.

In setting the proper evaluation on a package of bees we must have young bees, a prolific queen, and installation of them at the right time. The lack of any of these values will certainly interfere with the size of the honey crop. Good management in developing populous colonies is essential and we realize that considerable improvements could be made to assure better results.

Beekeepers are gradually becoming conscious of the value of using pollen substitutes and pollen supplements in their systems of management. The transition from the old school of thought to the new will require time, but this will eventually occur and beekeeping will then become a more highly specialized industry. It becomes increasingly evident that the proper development of colonies to build strong populations for the flow demands better management from the time packages are installed to the time bees are ready to store honey. Better stock and more attention to dietary needs will certainly increase the size of the honey crops.

**New Trend in the Utilization of Packages**

As we move forward with new ideas and developments in the field of beekeeping, we look on the horizon to see what is ahead and to be prepared to take advantage of scientific findings which are gradually unfolding before us. Unfortunately, we hesitate to leave beaten paths and try new ideas until others have fully demonstrated that the new idea has definite merits. To some of us, the boldness of trying new methods offers a source of pleasure and becomes fascinating. Some have no interest in new ideas and will not make changes until others have taken the lead and proved to their satisfaction that the new idea is proving profitable.

Honey producers up to this time have demanded that package bees be started about six weeks before the main flow. Experience has shown that under ordinary conditions the package colony is not ready for the flow and as a result, the size of the crop is determined by the size of the population and the amount of nectar available. While we have no control over the amount of nectar, we can develop strong colonies if we consider the factors involved.

**Installing Packages Earlier**

Experiments are now under way by the writer and several collaborators in the North which are encouraging. Package bees are being received and installed several weeks earlier than customary under controlled conditions with a view of developing colonies equal to, or better than wintered-over ones. We are at present making studies and observations on the time factor and the utilization of food reserves to provide the necessary elements in developing good strong colonies. It is too soon to make recommendations, as this is a long-range program which must be checked over a period of several years before decisions can be reached on the proper procedures to take in making the plan successful. In the final analysis, we realize that it will be necessary to adjust the time factor with the time the main flow starts. I do not intend to elaborate on this idea, as decisions must be reached before we can determine the proper steps to take in the utilization of earlier packages and dietary needs.

It would be advisable for some of the large producers to experiment in a small way with early packages so that they can work out a satisfactory program to meet their particular requirements. I would suggest that a few packages of various sizes be received at intervals during March and records kept on the number of pollen combs and honey used in building colonies to full strength for the flow. If pollen supplements and pollen substitutes are used, the amount used should be recorded so that the experiment can be repeated in instances where certain groups prove promising.

**Time to Build Up Colonies**

The average time required to build up colonies will in a large measure help in making decisions. Several beekeepers are selecting unsealed combs of honey and several good pollen combs in the fall to use in their package program. By all

means be sure that the combs have ample pollen, as bees will consume a considerable amount in producing brood and if a shortage develops later, the colony will suffer a setback and the beekeeper will give up the idea and fail in his attempt to develop good colonies.

The conditions under which the early packages are to be introduced is important in that a good warm building to install the packages must be provided. After the bees are settled and the queens laying, the colony can be treated in the same manner as other colonies being wintered.

**Syrup Plan of Installing Packages**

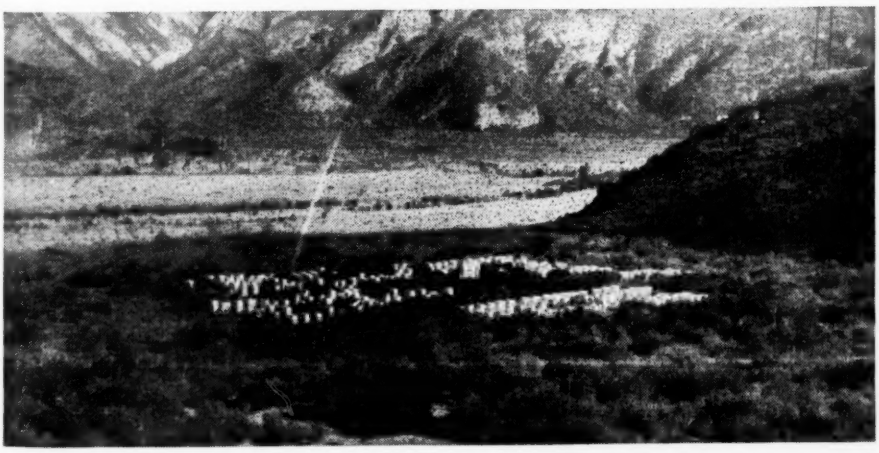
The direct release method of installing packages is to be recommended providing the necessary precautions are taken to avoid spraying too much syrup on the bees. My experience shows that the life span of the worker can be drastically shortened by gumming the bees with syrup. I am convinced that spraying can be overdone and the results will prove disappointing. The bees must be fed heavily, but keep the syrup off the bodies of the bees.

I have offered suggestions only as to what procedure to take in starting the experiment and it is up to the producer to work out the details of feeding and general management. Many experiment stations will eventually provide complete data on the development of early packages if the project proves profitable. At the moment, we have to determine the cost of wintering colonies and the cost of developing colonies earlier than customary. We already realize that the cost of developing packages during the usual period is cheaper, but our aim is to have colonies capable of producing larger crops and the extra honey must more than pay for the extra expense if the plan is to be widely adopted.

During 1946 the writer is scheduled to ship package bees starting March 1st and at intervals during the month for the purpose of making observations on the size of package, time required to develop colonies, and to solve the food problem associated with this type of program. This past spring packages shipped starting March 20th, and handled under controlled conditions proved satisfactory. Whether or not we will enter a new era of beekeeping will depend on the results obtained during the next few years with early packages.

Donaldsonville, La.

## A VALLEY APIARY



**A commercial apiary in the West sheltered from the prevailing winds by mountains.**

# *New Methods* of Beekeeping

**By Prof. H. J. Rahmlow**

[Prof H. J. Rahmlow, a horticulturist as well as a beekeeper, has been a close student of the work carried on at the U. S. Bee Culture Laboratory in charge of Dr. C. L. Farrar, at the University of Madison, Wisconsin. He has seen as has also the editor, how Dr. Farrar has by the use of select queen mothers of strong colonies, made so by pollen supplements, been able to greatly increase colony averages to more than twice the average yields of good beekeepers. These averages mean not only more bees for the harvest but large crops of honey. The results are so remarkable as to be almost beyond belief.—Ed.]

Many improved practices in agriculture have been adopted by farmers during the past 25 years. Witness the increased production during the war with decrease in manpower. Beekeepers, too, have been thinking and working on methods to increase production.

We all know the way to get a full crop of honey during a certain period of bloom is to have colonies with a maximum number of field bees to bring in the crop. Every beekeeper has heard time and again, "Have colonies strong for the honey flow." How to get colonies strong for the white and alsike clover flow is, therefore, the important problem in clover sections. Sweet clover has not been plentiful in late years and often, therefore, colonies not strong early in June fail to get a crop.

During the past 25 years we have gone through three periods of beekeeping development. Before the first World War practically all beekeepers wintered bees in one 8 or 10 frame brood chamber. The queen was confined to one such brood chamber throughout the year. For wintering it was thought essential that bees be kept quiet—put into the cellar as early as possible and kept there as late as possible so they would not wear themselves out and would consume but little honey. For a year or two following the war as a beginner I practiced that system. We considered a 100-lb. average a maximum crop and were quite pleased when we got 50 pounds per colony.

**At the close of the war came a new system**—that of giving the queen two hive bodies for spring brood rearing followed at the beginning of the honey flow or sooner with swarm control by the Demaree system. We practiced that system for years. How well I remember hiring a young college beekeeping student, setting him to work one morning in a yard of 75 colonies all about ready to swarm, with instructions to Demaree them as quickly as possible. When I returned that evening he met me with an unhappy face saying he thought he would have to quit the job. I said, "Why you can't quit. You just started and these bees must be kept from swarming. What's the trouble? He answered, "I worked all day and found only four queens. I'll never get them Demareed!" That was most discouraging but fortunately I was able to hire a neighbor beekeeper to help him get the job done. But I always considered that method of swarm control a laborious task limiting the number of bees a man could take care of.

We were always on the lookout for a method that would produce stronger colonies by early June. We found it when Dr. C. L. Farrar took charge of the Central States Bee Laboratory in Madison. He taught some revolutionary ideas. Experience during the past four or five years has taught us their value. I don't believe I exaggerate when I say any beekeeper who has really practiced the new method successfully has greatly increased his honey production with less labor per pound of honey.

**Fundamentals of Late Practices**

To be successful we must accept the following as fundamental facts:

1. A colony cannot be strong in spring unless it is strong in fall. Therefore, maximum brood rearing in August and September is necessary.

2. The colony normally stops brood rearing during October or early November. Brood rearing begins again in January and the amount of brood reared in Jaunary, February, and March depends upon the quality of the queen, colony population, and amount of honey and pollen available to the winter cluster. With these conditions favorable, it is possible to replace old bees which die during winter with young bees.

3. Colonies rearing brood well in late winter months are usually out

of pollen by March or early April. Since they can raise brood normally only a short time without pollen, spring feeding becomes a necessity for maximum brood production.

It is this problem of maintaining maximum brood rearing from February until June that is difficult for beekeepers to put into practice. Of course maximum brood rearing during February, March, and April is not at the same level as in May and June. If we winter in cellars or pack heavily, we cannot inspect colonies as early as we should. This lack of inspection is the reason why so many beekeepers insisted winter brood rearing is abnormal, and that such colonies surely die. We just never looked to see what was going on.

Using a system of confining the queen in August and September to a small brood chamber, which results in small colonies, and not stimulating winter brood rearing, we were able to winter with from 30 to 50 pounds of honey per colony. Under the new system colonies starve unless given more winter stores. We really need from 70 to 90 lbs. of honey and pollen from October until the honey flow begins again the following season.

### Spring Feeding of Pollen Supplements

Much has been said about feeding pollen supplements and substitutes in late March and April to maintain maximum brood rearing. It has been proved that by this method colonies can be produced by May so strong that even the most optimistic beekeepers are surprised.

Now a few words about our experience. Soy bean flour produced by expeller process is the best supplement found so far, considering price and results. Dr. Farrar has shown that when mixed with ¼ part of pollen it is as good as pollen alone. It should be fed to every normal colony before the supply of pollen available to the cluster is gone. When is that? We usually start feeding the last week of March, though we could get stronger colonies if we started earlier.

Shall we feed the mixture dry, placing it outdoors, or mixing with sugar syrup and placing it on top of the frames? That question is easy to answer in my opinion. If the weather is warm enough for bees to fly there are usually plants yielding pollen. It is during weeks of cold rainy weather when they can't fly that they need pollen. We can't provide it uniformly and continuously unless we place it on top of the frames during these periods of confinement.

### Can We Increase Honey Production?

Our crop reporting service has given the average honey production per colony for the state of Wisconsin in 1945 as 70 pounds. We know many beekeepers who received less, even in good locations. Of course, the average of 70 pounds means that many received a smaller crop while others obtained more.

At our annual convention at Rice Lake held recently, Dr. C. L. Farrar reported on production of colonies of the Central States Bee Laboratory, Madison. He stated wintered-over colonies produced as follows: Two-queen colonies averaged 435 pounds of honey above winter requirements. One-queen colonies averaged 286 pounds above winter requirements. However, this was after an average of 2½ pounds of package bees had been taken from the colonies late in April for experimental work. They actually stored about 100 pounds more than the above figures, because the honey consumed during April, May and June as well as winter requirements was deducted.

The Laboratory installed 190 two-pound packages. They produced an average of 214 pounds above the 30 pounds consumed in the spring, plus 60 pounds allowed in the fall.

### Not a Good Location

Were these yields due to a "good location?" We do not believe so. Madison has never been considered a good location by the many beekeepers who have lived here and tried honey production. Not a single commercial beekeeper has developed in the county. As a rule, if a beekeeper becomes successful and has a good crop year after year, he branches out and soon becomes a commercial producer. That has not been the case in the Madison area. The production of the average beekeeper of Dane County this past year was not any larger than in average sections.

The crop as reported by Dr. Farrar simply shows what can be done

(Continued on page 119)

# A Balance *in Black*

**By F. L. Shoemaker**

"Adventures in Beekeeping" (Gleanings, Feb. 1945), and "Happier Adventures" (April, 1945), described the fumbling of two amateur beekeepers (son Dick and I). This fumbling resulted in much error, some success, a balance in red, but loads of fun.

However, a redeeming feature was that each year was more successful than the preceding one. In 1945, our apiary rang the bell. Twenty-one colonies were wintered (1944-'45) with no losses. A total of 2100 pounds of salable comb honey was produced—an average of 100 pounds per colony. The best hive produced 160 pounds and the poorest 65 pounds. The five best hives averaged 130 pounds each. For the first time, the financial ledger showed a balance in black. It was a grand year! And, needless to say, the excellent crop did not lessen the fun.

We hive our bees in double brood chambers. At the beginning of the clover nectar flow, we place approximately two frames of honey and eight of sealed brood, together with the queen, in one of the two hive bodies. This hive body is kept on the old stand and is supplied with comb honey supers as rapidly as they are needed. The remaining frames are placed in the other hive body. This hive body is provided with a cover and bottom and set on a new location. The field bees in this hive return to the parent colony, thus making the field force in that hive very numerous.

Usually there are enough capped queen cells in the apiary to give one to each new colony. Occasionally, a queen is purchased and introduced. This method enables us to **requeen without dequeening.**

The new hives build up on the main nectar flow. If any colony, either parent or off-set, is short of stores at the close of this flow, it is given stimulative feeding in August. The result is that all hives are very strong in bees and brood by Sept. 15, the beginning of the aster-goldenrod flow, a flow which has never failed us during our four years of experience. Contrary to the experience of some apiarists who write in Gleanings, our bees have wintered very well on aster-goldenrod honey. We have suffered no winter losses since our first year. These losses were probably due to a lack of bees and honey rather than to the quality of the honey. Usually in this region there are several weeks of warm, dry weather after the major fall flow. Consequently, the honey is well ripened and capped.

**Populous Colonies for Winter**

The large force of bees and the excellent fall nectar flow result in colonies well packed with food for winter and spring. When the hives are reunited late in the fall, each colony has from 80 to 100 pounds of pollen and honey, together with all the bees from the two hives. In reuniting, we first kill the oldest and poorest queens. If there are more good queens left than will make double chambered colonies, the hive that has produced best is placed on top with the expectation that the queen mother of those bees will survive. Usually she does but there are exceptions. In such cases, do the bees know best? Or is the queen in the lower chamber victorious in the death struggle?

A large box covered with roofing paper is placed over the hives about Nov. 20 and removed about April 20. This year, due to the very early spring, the boxes were removed on February 18. No harm seemed to result; instead, early brood rearing was probably encouraged.

**We examined our apairy on March 18.** For two weeks, the bees had been quite busy storing pollen and nectar, largely from red maple. On March 24, our strongest colony had 13 frames well filled with eggs and brood. Usually it is May 1st before colonies are that strong in this region. Another unusual occurrence for this early date was the presence of drone brood.

Plum, red bud, elm, and apple trees came into bloom between March 24 and April 3, almost two or three weeks early. Summerlike weather prevailed until mid-April. Then for five weeks it was cold, cloudy and rainy and the hives were packed with brood and idle, mischievous bees. Queen cells appeared in abundance. We cut queen cells. Hive bodies were reversed. As a result, only one hive swarmed prior

to June 1. Stores disappeared rapidly. But only one or two hives suffered from hunger, thanks to the abundance of food stored the preceding fall. The hungry hives were fed and brood rearing was resumed.

We place supers on all hives about May 15, the beginning of the locust, tulip, poplar, raspberry and blackberry flow. About one super of this mixed honey was secured from each colony in 1944 but practically none in 1945.

The bees did enter the supers, however, and began to draw comb. Between May 25 and June 10, the date depending on the strength of the colony, the colonies were reduced to a single brood chamber. The nectar flow continued to be slight. By June 25, 1944, almost all the surplus for the year had been collected. On that date in 1945, there was not even one super of capped honey in the entire apiary. To make matters worse, no rain fell from June 19 on. A drought similar to the one that ended the flow in 1944 was in prospect. The nectar flow practically ceased on June 28. A poor honey year seemed certain.

**Then the rains came!** Rain fell in abundance on July 1 and 3. The nectar flow from sumac and little white, alsike and sweet clover was heavy from July 2 to 31. Supers were filled with fine light honey as if by magic. The hum of hundreds of thousands of bees filled the air with the sweetest of music. What had seemed to be a certain failure was changed into an excellent year by two or three timely rains.

**But beekeeping is more than putting on empty supers and taking off** full ones, as many an amateur apiarist has discovered. During the three years after we had transferred our bees into double-chambered hives, only two colonies had swarmed. One of those had issued after the main nectar flow and was lost. The other came out at the beginning of the nectar flow but was hived. Our success convinced us that we had solved the swarming problem. "Double-chambered hives—no swarming" seemed the rule. But what a rude shattering that notion took between June 1 and 15 of this year! All but three hives swarmed in that two-week interval, two others being considerate enough to wait until later. Several colonies swarmed twice.

Our apiary is located 3 miles from our home. Fortunately, I was on vacation during that two week interval and therefore was at the apiary each day. One, two, and three swarms daily was the usual occurrence. Never a dull moment! Since our queens' wings were clipped, no swarms were lost until after the nectar flow was over and then only two. After much pondering and reading, leaning heavily on my apiarist's staff—I reached what seems a satisfactory solution to the swarming problem. But who knows? It worked in 1945. It may fail in 1946. The bees have made me more humble.

Men think they think. Men also think that bees do not think. But bees, which do not think, certainly can cause man, who thinks he thinks, to do a lot of what is considered as thinking. And sometimes, when the bees go on a rampage, one begins to wonder about the thinking business. This is late October, 1945. Another winter approaches. The aster - goldenrod flow is practically over. Hives are being reunited. Wintering is just around the corner. And we are beginning to dream about 1946, when we hope that books will again balance in black.

Athens, Ohio

**J. C. Bee-Mason of Sussex, England, surrounded by 40,000 of his namesakes.**

# *Tunisian Beekeeping*

**By Capt. J. Turpin**

**General view of a Cape Bon apiary established by a White Russian in 1923. The brood chambers of the 25 frame hives have outer walls of straw to maintain a cool interior temperature. Tall eucalyptus trees may be seen in the background.**

[This article was received July 17, 1945 but due to lack of space has not appeared earlier.—Ed.]

In the same latitude as North and South Carolina and Southern California, Tunisia enjoys a moderate climate in the north, favoring a variety of agriculture, and in the south verges into desert suitable for the date palm and the olive tree.

Primitive native bee culture exists around Mareth on the hilly borders of the southern desert. Here the hives, called "djebas" by the Arabs, are hollow palm tree logs piled, twenty or so, one on top of another. Each colony of bees occupies a shelter a yard long and eight inches in diameter. The ends are stopped with clay leaving one small entrance. To take honey the bees are driven back with smoke, a stopper is removed, and a comb or two cut out. The nectar is derived from mountain scrub, mostly rosemary and thyme.

Hive appearance and colony management can hardly have changed since Biblical days. The native village where I first saw such beekeeping is as strange to Western ideas as its beehives. Its houses are subterranean. From above, each appears like a well sunk into the clay soil with the living rooms driven into the side of the shaft.

Cape Bon, in the fertile North, supports a small number of commercial apiaries. The largest are worked by Russians, who sought refuge and livelihood here, after revolution in their own country.

War conditions have imposed a dire scarcity of materials and labor upon these beekeepers. A sugar ration for bee colonies is unheard of and yearly colony yields have dwindled from 70 to 100 lbs. of honey to only 20 or 30.

A colony examined in late March revealed brood on thirteen combs in the single brood chamber, which is never doubled, and in three combs of the shallow super. The latter remains on the hive throughout the year. Pollen appeared plentiful though honey was scanty. Drones were present; they survive all the year round. Their numbers reach a peak in April, but at the end of May are reduced by the provident workers.

Drone control is effected in April. The brood chamber is deprived of two or three of its normal complement of 25 frames and the gap is adjusted to one end of the chamber. Above are the shallow super combs.

From these the bees suspend new drone combs into the space below. When filled with maturing brood these combs are taken out for rendering into wax.

While writing of drones I recall one afternoon being struck, while loitering in an orange grove bordering upon a large apiary, by a loud and constant hum as of a powerful swarm. I saw a sparrow hotly pursued by many drones who no doubt conceived themselves to be giving chase to an elusive queen abroad upon her mating flight. A stone cast into the air evinced similar interest from the determined suitors.

**Queen Raising is Little Practiced.**

The beekeeper relies upon natural supersedure. Should it be necessary to rear a queen he awaits the April swarming season. Four-frame nuclei are then subtracted from a colony with advanced queen cells.

Experiments with Italian queens disclosed that they are prone in this climate to cease laying in the winter, whereas the black Tunisian queen will maintain her fertility. It is not impossible here for a virgin queen to emerge at the end of February and be mated in March.

The introduction of a newly mated and laying queen in a nucleus hive to an established colony, headed by an aged queen, is achieved by an intricate system of juxtaposition and transposition of hives with detachable sides and entrances back and front. Finally, the old queen, followed by a depleted retinue, is found and killed, and the swollen forces of the nucleus are placed in the large hive.

The careful modern methods of stock selection and breeding, swarm control, supering, and manipulation are ignored. Hives are largely single-walled, each having one super only above the brood chamber. Queen excluders are not used. Brood chambers generally contain 25 combs, sometimes 16 each 13 inches by 9⅞. The super combs are smaller, 13 inches by 4¾ inches. These dimensions were chosen by the beekeepers in the light of local experience.

To remove honey the hive is opened with the aid of smoke and laden super combs are withdrawn one by one. After the bees have been shaken or brushed off, the combs are carried in a closed box to an outhouse room where the manual processes of uncapping and extracting are completed.

**A Seasonal Commentary is Interesting**

Two apiaries are separated by a mile and a half. Both are sited between sea and mountains. They enjoy a moderate winter, a warm spring, a hot, though not excessive hot, summer, and a more generous

**The sealed super combs are removed one by one to be carried in a box to the extracting room.**

rainfall than most other parts of Tunisia.

The season opens in March in the apiary nearest the sea. Bees seek the white broom, producing a light golden honey that granulates rapidly to butterlike consistency.

In May the second apiary works the neighboring orange, tangerine, and lemon groves. The other apiary simultaneously yields the renowned "Miel du Printemps" (spring honey) from nectar gathered from the extensive clover family, besides sulla and bourrache, found in the narrow coastal plains. The orange honey, perfumed by the flower, is a golden liquid that crystallizes after two or three months, to a creamy grain. Spring honey is of similar color but its granulation is coarse.

In this month the valley lands and lower slopes of the mountains present vast expanses of contrasting shades. The gold, cream, and white, of the myriad flowers in bloom are foil to the rich tints of earth turned under the plough and the soft green of planted grain. The scene is an arena of color. Bare and rugged peaks impress the onlooker with the presence of a land casting aside her civilization to display wild dominion and grandeur that underlies all else.

At night when majestic views are dimmed and softened by moonlight one may sense the soft Arabian perfumes on a still air. Most alluring of all is the distant scent of the orange grove. The imaginative mind, supposing the bee to be endowed with a sense of smell surpassing human powers, will wonder if she is not tormented by the hours of darkness which prevent her sallying forth at all times to plunder such inexhaustible sources of wealth.

In this same region, so little supplied with cooling streams and rivers, one more frequently observes the labor the bee must devote to securing her supplies of water. Where there is a dripping tap, or a reservoir, there bees will inevitably congregate. The thoughtful beekeeper who provides an artificial fountain may realize the value of his light deed by observing the constant succession of water carriers. While the bee pauses for a minute to take her fill one may consider her individuality. For size the Tunisian bee cannot be distinguished as outstanding, but, in color, her black is unrelieved by contrasting yellow bands. In temperament it is true that she is capable and active in the defense of her home.

In June and July, if sufficient rain falls to moisten the baking soil, the inland apiary is able to gather a harvest of deep red heavily perfumed honey from the wild thyme on the hillsides. This hardens coarsely to a dull greyish appearance. It is strongly flavored and much esteemed by the Arabs as a panacea.

At the end of August and during September these bees visit the flowering eucalyptus trees. The honey is agreeably perfumed, colored a clear gold and changes into compact medium crystals. It becomes so solid and hard that it can be cut into cubes like sweets.

Finally in October and November the same apiary garners the last harvest of the year from the nearest rosemary and heather. Rosemary honey is bright and almost colorless. In solid state it resembles cream, but frequently it is mingled with the heather and assumes a ruddy hue.

So, in three months of the year only is no honey taken from these apiaries. But go to an upland mountain apiary where heather and rosemary abound, and there one will take a surplus in December, January, and February.

Such is a picture of bee culture in Tunisia. Many things I found strange to the taste of a progressive beekeeper. Standardization of equipment is a principle largely overlooked. I saw some hives made of concrete; others with an inner wall of wood and an outer wall of straw; on one occasion that laughable creation the "Ruche Automatique" (automatic hive)—it tapers inward from top to bottom at the back and the front.

However, beekeepers do not change. All were most friendly. With charming hospitality, they diverted the time of a soldier in a foreign land. There is no more one can ask. I thank them.

Ludlow, Shropshire, England.

## OUR COVER PICTURE

The very excellent picture of the comb of bees with the queen a little above the center shown on our cover for this month, is taken from the book, "The Golden Throng," by Edwin Way Teale.

# Investigations on Materials Suggested as Bee Repellents*

By F. R. Shaw and A. I. Bourne

## Introduction

For years, beekeepers have hoped that some material might be found that could be added to insecticidal and fungicidal sprays or dusts in order to repel bees from poisoned foliage.

The problem is exceedingly complex. Many factors are involved and it seems almost impossible to evaluate correctly some of the "evidence" that has been offered both for and against the effectiveness of repellents. A few of the complicating factors include:

1. **Lack of clear-cut diagnosis of bee poisoning in many instances.** Some beekeepers find crawling bees and without further investigations diagnose the ailment as poisoning. preferably arsenical poisoning.

2. **Lack of complete data surrounding cases of bee poisoning.** Evidence is lacking and conflicting reports exist concerning conditions that will result in bee poisoning. In view of this it can be seen that experiments to prevent poisoning by the use of repellents are difficult to organize inasmuch as not all of the conditions favorable to poisoning are known.

3. **Variable weather factors.** It is well recognized that both bee poisoning and plant injury are correlated with weather factors.

4. **Varietal differences of plants** are sufficient to result in varying degrees of injury from the application of sprays or dusts. Varietal differences of attractiveness to bees also must be considered since the number of visits to blossoms may be due to this as much as to the repellent.

5. **Differences in spray machinery** may, through improper agitation, result in plant damage if some of the spray materials fail to be properly dispersed.

## Review of Literature

One of the earliest known references to the use of bee repellents was the recommendation in 1900 of carbolic acid for this purpose.

In 1921, Melander conducted some tests to determine the value of several materials as repellents. Among his conclusions are the following:

1. Creosote, creosol and carbolic acid are very repellent.

2. Carbon disulfide, nicotine sulfate and napthalene are quite repellent.

In 1922, Morse in eastern Massachusetts, suggested the use of a proprietary creosol compound "Milkol." Her "evidence" was the statement that bee losses had been reduced even though all the shade trees had been sprayed.

Dadant, 1923, declared that lime sulfur and bordeaux mixture were repellent to bees. He stated that these materials, mixed with spray solutions, would prevent bees from sucking up the poison.

Bourne, 1927, stated that nicotine sulfate acted as a repellent. Bees which had a choice of blossoms sprayed with solution containing nicotine sulfate or untreated blossoms always preferred the latter.

In 1936, Root declared that the odor of creosote was not offensive to bees so far as is known.

Bottcher, 1937, stated that nicotine, lime sulfur, and sodium fluoride or sodium fluosilicate act as repellents.

Southwick, 1928 and later, has insisted that creosote, at the rate of one pint to 100 gallons of spray solution, is an effective bee repellent. He states that the use of this material has reduced bee losses.

Milum, 1940, stated that Milkol had been used as a repellent apparently with good results. He also thought that Black Leaf 155 might have some value since its residue would contain nicotine.

In 1941, Shaw and Mendall tested many materials including creosote, tar oil, phenol compounds, Milkol, napthalene and alpha and beta napthols. The number of visits of bees to treated foliage in all cases was less than to the untreated foliage. The materials were applied by means of a compressed air sprayer. It is realized that agitation might not have been adequate even though the sprayer was shaken thoroughly before any spraying was done. In all

*Contribution from Department of Entomology, Massachusetts State College, Amherst, Mass.

Milkol combinations, from slight to moderate blossom injury occurred. Both creosote and tar oil compounds produced severe blossom injury.

In 1942, Butler stated that in England no very satisfactory results had been obtained with creosote and its use at present was not recommended.

## Experimental Data

### 1. Feeding Tests

In 1941, feeding tests were conducted. Bees were selected at random. They were placed in wire and wooden cages and provided with a bottle of water and a bottle containing a mixture of 50% sugar syrup and 50% of the repellent at a concentration to give the necessary dilutions.

The tests were conducted on the basis that if a material were repellent, the bees would starve rather than feed. Hence their rate of death would be an index of the value of the material. Of course the materials might act as insecticides. Some data indicate that this might occur.

The following data, table I, represent our results of the 1941 season.

**Table I**

| Materials | No. of bees | Period in days to produce 50% mort. | 100% mort. |
|---|---|---|---|
| Water (starvation check) | 270 | 3 | 7 |
| Sug. syrup | 223 | 18 | 33 |
| Sug. syrup plus creosote | 283 | 7 | 19 |
| Sug. syrup plus carbolic acid 1-800 | 318 | 6 | 20 |
| Sug. syrup plus Milkol 1-800 | 246 | 8 | 21 |

From this table it is evident that a reduction in length of life occurred when any repellent was introduced. If the repellent possessed any insecticidal action its toxicity appeared to be low. Since this method seemed to offer a favorable means of investigation, it was considered advisable to continue the work the following year.

Claims had been advanced relative to the greater value of creosote as compared with other materials. It was considered by those most active in recommending its use that this material was cheap and effective. The question was raised as to the minimum dilution of repellent. Therefore the tests in 1942 were conducted with creosote as the only repellent. The data obtained are included in table II.

It will be noted that the stronger the creosote, the more rapidly the bees died. However, at concentrations above 1-800 (one pint to 100 gallons of spray solution) the bees lived almost as long as did those fed sugar syrup . Consequently creosote at these concentrations did not apparently have much if any repellent action. Its insecticidal effect was also slight. As a result, if creosote were to be used, the indications are that at least a dosage of one pint to 100 gallons would be necessary.

It was noted that considerable variation occurred in the length of time the creosote remained in suspension. It is felt that the longer length of life of the bees recorded in table II may have been due to this factor or possibly to differences in the bees themselves since all lots lived longer than did those recorded in table I.

In 1943, the feeding tests were continued. In addition to determining the length of time necessary to kill 50 or 100% of the bees, records were taken of the amount of food consumed daily. Also, since the creosote mixtures did not remain uniform in suspension, it was felt advisable to use some wetting agent that would keep the creosote in suspension. After tests had been conducted in the laboratory, a wetting agent, Aresket, was selected. This was mixed with the creosote and the mixture formed a fairly stable suspension in the syrup.

The question of loss of syrup through evaporation might be raised. This factor was tested and while it varied somewhat from day to day, the loss was not great, usually between ½ and 1 cc.

**Table II**

| Material | Number of bees | Time to Produce 50% mortality | 100% mortality |
|---|---|---|---|
| Water (starvation check) | 275 | 4 | 7 |
| Sugar syrup | 264 | 16 | 40 |
| Sugar syrup plus creosote 1-200 | 197 | 5 | 16 |
| Sugar syrup plus creosote 1-400 | 160 | 10 | 25 |
| Sugar syrup plus creosote 1-600 | 473 | 12 | 30 |
| Sugar syrup plus creosote 1-800 | 314 | 12 | 30 |
| Sugar syrup plus creosote 1-1000 | 337 | 13 | 34 |
| Sugar syrup plus creosote 2-1600 | 308 | 13 | 36 |

The data which appear in tables III-V represent three experiments conducted at different times. Some variation does occur in the results. This might be due to several factors such as different samples of bees, or to environmental reasons.

In all instances the addition of the "repellent" material reduced the length of life of the caged bees. It is not felt that this reduction can be ascribed definitely to either repellent action or to insecticidal effect. Both may act. It should be noted, however, that in table III with dilutions of 1-600 and 1-800 of creosote, the amount of food per bee was substantially the same, whereas the period of life was reduced. This would appear to indicate that insecticidal action was occurring.

In tables IV and V which give data showing effect of addition of wetting agent Aresket thereby physically improving the mixture of creosote and sugar syrup, the amount of the mixture consumed per bee was less. This may be due to the creosote's being more evenly distributed and thus functioning better as a repellent or possibly there was an increased insecticidal action as a result of the addition of the wetting agent.

**Discussion of Feeding Tests**

**1. Comparison of creosote, carbolic acid and Milkol—table III.**

Comparison of the repellents listed above indicated that carbolic acid at a dilution of 1-800 seemed to be a better repellent if the criterion employed was the reduction in length of life. The bees receiving Milkol or creosote at 1-800 dilutions lived about 25% longer. Milkol did not appear to be any more repellent than creosote 1-800. Creosote 1-600 proved to be the most repellent on the basis of shortened life of bees.

**2. Effect of addition of wetting agent.**

A comparison of tables III, IV, and V shows that the addition of the wetting agent to the creosote solutions resulted in reduction of length of life. The bees fed sugar syrup in all three experiments lived about the same length of time.

As regards the comparative values of creosote plus Aresket and carbolic acid at a dilution of 1-800, there seemed to be no appreciable difference in the length of life of the bees receiving these treatments. This indicates that either the repellency or the insecticidal action of the creosote mixture was improved by the addition of a wetting agent.

**Experimental Data Concerning the Effect on Plants of Bee "Repellents"**

Preliminary experiments indicated

(Continued on page 115)

**Table III**

| Material | Amt. of food consumed (in cc.) | Number of bees | Amt. of food cons. per bee (in cc.) | No. of days until 50% mort. | No. of days until 100% mort. |
|---|---|---|---|---|---|
| Water | 9 | 330 | .027 | 3 | 7 |
| Sugar syrup | 188 | 235 | .80 | 19 | 35 |
| Creosote 1-800 plus sugar syrup | | 573 | .171 | 8 | 20 |
| Creosote 1-600 plus sugar syrup | 24 | 159 | .151 | 5 | 12 |
| Carbolic acid 1-800 plus sug. syrup | 34 | 210 | .161 | 5 | 15 |
| Milkol 1-800 plus sugar syrup | 38.5 | 293 | .131 | 7 | 20 |

**Table IV**

| Material | Amt. of food consumed (in cc.) | Number of bees | Amt. of food cons. per bee (in cc.) | No. of days until 50% mort. | No. of days until 100% mort. |
|---|---|---|---|---|---|
| Sugar syrup | 223 | 262 | .851 | 17 | 33 |
| Creosote 1-800 plus Aresket plus sugar syrup | 29 | 178 | .162 | 5 | 12 |
| Creosote 1-600 plus Aresket plus sugar syrup | 17 | 164 | .103 | 5 | 9 |
| Creosote 1-400 plus Aresket plus sugar syrup | 15 | 156 | .096 | 4 | 9 |
| Carbolic acid 1-800 plus sugar syrup | 18.6 | 142 | .131 | 5 | 14 |

**Table V**

| Material | Amt. of food consumed (in cc.) | Number of bees | Amt. of food cons. per bee (in cc.) | No. of days until 50% mort. | No. of days until 100% mort. |
|---|---|---|---|---|---|
| Sugar syrup | 146 | 152 | .960 | 19 | 34 |
| Creosote 1-800 plus Aresket plus sugar syrup | 23 | 156 | .147 | 6 | 12 |
| Creosote 1-600 plus Aresket plus sugar syrup | 15.5 | 135 | .114 | 5 | 10 |
| Creosote 1-400 plus Aresket plus sugar syrup | 14.5 | 130 | .111 | 4 | 10 |
| Carbolic acid 1 800 plus sugar syrup | 30 | 223 | .134 | 6 | 16 |

# *Air Conditioning* of Bee Hives

**By W. J. H. Dicks, BSA**
University of British Columbia

No one has ever had the opportunity of a personally conducted tour round a bee hive, so our present day ideas of what goes on inside are partly the results of experiment and partly the effects of supposition. Naturally we are inclined to judge the behavior of bees largely by our own reactions in similar circumstances, but I venture to say that in so doing we are often led to false conclusions.

To begin with, bees in common with other insects, are "cold blooded" creatures in contrast to human beings who, along with other animals, are "warm blooded" creatures. This means that while animals maintain a regular body temperature (human beings 98.6 degrees F.) bees take their body temperature from the surrounding atmosphere: if the air is at 100 degrees F. on a hot summer day, then the bees' temperature is 100 degrees F., but if the temperature drops to 60 degrees F., then the bees' temperature drops to 60 degrees F. also. Hence, bees are not distressed by changes of temperature like animals are. Bees, however, begin to suffer at the extremes of temperature; in the cold they cluster and maintain heat by muscular exertions, and in the heat they start fanning in order to cause a circulation of air. Accordingly in a beehive the temperature tends to vary continually due to outside conditions, but this does not make the bees uncomfortable. The body heat of animals in a barn tends to keep the temperature up in cold weather, but conditions are not so in a bee hive.

**Examining conditions in late winter,** it has been found that, in spite of the outside temperature, bees maintain the cluster at 57 degrees F. by opening out the cluster if the temperature gets higher and creating heat by muscular motion if the temperature falls. Of course the honey on which they are clustered helps to keep the temperature from fluctuating. When brood rearing starts, the weather is of course warming up, but an effort has to be made to keep the temperature of incubation at 95 degrees F., when the outside temperature is still cool enough for fur coats. Cold spells during early brood rearing periods often cause the brood nests to be contracted, resulting in the outside larvae getting chilled. Hence the bees' powers of generating heat are limited.

Later on, the heat of the outside atmosphere, the rays of the sun striking the hive, the intense activity of the bees bringing in honey and transporting it inside the hive, the heat of the honey and pollen being brought in, all tend to raise the temperature of the hive to a considerable extent. It must be stated that the nectar, even if cool when obtained, takes on the temperature of the bees' abdomen during the flight home. The problems of the inmates are two fold now: (1) to keep the incubation temperature of the brood nest constant, situated as it is in that very awkward position, just inside the entrance, and (2) the expulsion of hot moisture laden air, due to the evaporation of the nectar to a consistency in which it will keep in storage.

**Evaporation of nectar is the process of hive ventilation** in which beekeepers are most interested. Hot air absorbs more moisture than cold air. Hence, the hot air inside the hive at the close of a summer's day absorbs more moisture than the cool air which is being taken in all the time. Therefore, the hotter the hive, the easier it is for the bees to expel the surplus moisture from the nectar. It is obvious then, that if the outside air is not only cool but also dry, the dry air taken in will enable even more moisture to be absorbed, but if the intake is damp, the process of evaporation must become exasperating to a colony. This is one argument in favor of feeding sugar syrup for winter stores before the damp weather sets in.

In spite of the fact that the bees show that they fully understand their business, beekeepers every now and then endeavor to assist them. Staggering the supers is one way, ostensibly to keep the hive cooler. But the foregoing has shown bees do not mind the heat, in fact they prefer it. This practice, although it creates a diffusion of air,

certainly does break up the air-conditioning ducts formed by long rows of the bees themselves all pointing one way and fanning vigorously. Again, bottom boards are made with a ⅞" side and a ⅜" side, the ⅜" side being the bee space side. In hot weather, beekeepers are advised by many authorities to give hives as wide an entrance as possible. But if the ⅞" side is used, the bees are not able to crawl direct from bottom board to bottom bar; they have to go to the edge of the bottom board and climb up the walls to reach the frames. This is a great drawback in the busy season. Moreover, the bees are easily able to move a current of air through a long passage one bee space in depth, i. e. ⅜", but with a passage over twice as deep, i. e. ⅞", the process is made much more difficult.

Weak colonies are not always able to defend a wide entrance. Of course during the honey flow there is no robbing. But the beekeeper may forget to use the entrance blocks so that after the honey flow the weak colony promptly gets robbed out. Nuclei suffer a great deal in this way, particularly in the case of beginners who are trying to follow advice in books and bee journals.

So now we have several conflicting demands made on the bees at the busy season—the need for dry and cool air, the need for maintaining the incubation temperature constant, and the need for defense against robbers. In a "wild" hive, such as in a tree or a building, the bees always choose a small entrance through which an incoming and outgoing current of air could not possibly pass. But the wild home is probably not only well insulated (the walls of a tree stump may be six inches thick), but there is plenty of space not occupied by comb, nor can the sun strike a flat top. On the whole, if the beekeeper cannot give his hives constant attention, such as out apiaries, he had better err on the side of small entrances.

The results of extreme conditions are interesting although fatal. I have known the sun to shine so hotly on the metal hive tops that the bees are driven out of the hive, ventilation stopped, and so the combs melted. Evergreen branches on the hive tops would have prevented this. Very cold weather coupled with too little air and too much moisture can kill colonies. In the fall of 1942 I packed some hives in tar paper and shavings with a bottom entrance only. In March 1943, the entrances got iced up due to warm days and zero nights. The bees forced their way up through the inner comb, ate away the sock over it, displaced the shavings and struggled to the tar paper folded over the top. Here they got a little air through the folds but eventually suffocated in a damp mass. The roaring of distressed colonies was very loud, and I lost quite a few before I could bring them relief. Since then I have made provision for an air intake at the top which has alleviated further loss from that source. It is well to note that ventilation in winter is necessary not only to admit oxygen but also to carry off water vapor.

**It is astonishing how many thousands of bees can work in the cramped space of a hive,** in the dark and in a moisture laden atmosphere, where under similar circumstances animals would undoubtedly perish. It is possible that bees can inflate their tracheae with air (i. e. oxygen) close their spiracles, and then work inside the cramped spaces of the hive, the air of which although in motion is full of moisture, until the oxygen is all used up; and then descend to the entrance in order to refill the tracheae with fresh air. We know bees do not have lungs like animals.

In view of the foregoing, then, that bees are constructed very differently from animals, beekeepers need to adopt their practice according to the climate, and make provisions for a plentiful supply of air, both summer and winter.

Armstrong, B. C.

[Making a practical application of the points brought out by Mr. Dicks, it would seem that a colony of bees may not require as much ventilation as some suppose is necessary. At one time we staggered a pile of supers on the hive during hot weather but discontinued this practice, except to give one small ¼" opening behind, directly above the brood chamber. A ⅜" instead of ⅞" main entrance might result in less gnawing of brood combs above the bottom bars.—Ed.]

# What's for Dessert?

**By Mrs. Benj. Nielsen**

**Honey almond cream cake. Photo courtesy Kellogg Co.**

That's a question with which every mother is familiar, and that curiosity is not confined to the children either—the stronger half of the partnership frequently puts in a reminding bid for a bit of catering to his sweet tooth, too. The cook who has a well filled honey jar on the cupboard shelf never has to check on the sugar supply or count the days until the next sugar stamp is good and the family can again have a sweet dessert. At the Nielsen house sugar shortage has caused the least bother of any of the rationed items —the grocer wonderingly shakes his head over the rows of unredeemed stamps.

Honey gives a flavor lift to those old favorite, easy-to-make standbys such as Floating Island or corn starch pudding, custards, cream tapioca (one of the Nielsen favorites!) lemon pie, and so on and on. The flavor is even better the next day! It's a most agreeable way to furnish that quick energy so needed for the steady maintenance of "pep"—for honey needs no digestion before it enters the blood stream.

Why not change some of your own favorite desserts to the honey way? Try one, or, better, try all of the following and with these as a guide for sweet content and method of mixing, you can easily convert old favorites so you may have dessert regularly and not just when sugar is available. Chances are you'll so enjoy the flavor appeal that you will be using honey long after rationing ends and passing along your findings to others —a grand boost for honey consumption!

**Honey Almond Cream Cake**

Two cups of sifted cake flour, 2 teaspoons baking powder, ¼ teaspoon soda, ¾ teaspoon salt, ½ cup shortening, ½ cup milk, ¾ cup honey, 1 teaspoon vanilla, ½ teaspoon almond extract, 2 eggs, 1½ cups oven-popped rice cereal, and 1 tablespoon melted butter.

Sift flour, baking powder, soda, and salt into mixing bowl. Add shortening, milk, honey, vanilla, and almond extract. Beat until smooth. Add eggs and beat well. Pour batter into two greased 8-inch pans. Sprinkle one layer with rice cereal which has been crushed and mixed with melted butter. Bake in moderate oven, 350 degrees F., about 30 minutes. When cool, spread Honey Almond Cream Filling between layers, placing the layer with topping on top.

**Honey Almond Cream Filling**

Three tablespoons honey, 3 tablespoons flour, ½ teaspoon salt, 1 egg yolk, slightly beaten, 1 cup milk, 1 teaspoon vanilla, and ¼ teaspoon almond extract.

Mix together honey, flour, and salt. Combine egg and milk; add to first mixture and mix well. Cook over hot water, stirring constantly until thick and smooth, about 4 minutes. Cool; add flavoring.

**Honey Tapioca Cream**

One-third cup quick-cooking tapioca, ⅓ cup honey, ¼ teaspoon salt, 2 slightly beaten egg yolks, 4 cups milk, scalded, 2 stiffly-beaten eggs whites, and 1 teaspoon vanilla.

Combine tapioca, honey, salt, and egg yolks; slowly add milk and mix thoroughly. Cook in double boiler until tapioca is clear, stirring frequently. Fold small amount into egg whites; return to hot mixture and fold in gently. Add vanilla; pour into serving dish and chill.

For Chocolate Tapioca increase honey to ½ cup and add to grated

(Continued on page 119)

# *Live* and *Learn*

**By Propolis Pete**

**I'll never forget my first swarm.** I had one hive of bees, and the poor things were so pestered by my clumsy solicitude that they built themselves a flock of queen cells. It says in the book that a young queen will not swarm, so I sent for a new queen. The first step in requeening is to kill the old queen, but since I could not find her, I assumed that she was already dead. So, I proceeded to introduce the new queen accordng to the directions on the cage.

On the Fourth of July, three days later, I went to town to see the annual Fireman's Parade. When I came back, the whole family greeted me with the news that my bees had all flown away. The cussed bugs had swarmed out with the old queen, and left the new one to rule the roost. I know that they are not supposed to do that, but we are talking about what they did and not what they are supposed to do.

Yeah—there they were, up a tree, and I had nothing to put them in but a hive body bought in the event that they might need a super.

**Something had to be done, and quick.** I had no lumber, no tools, and no idea of what to do. Genius finally came up with the answer. There was a little house behind the barn that supplied wood enough for a makeshift bottom. The super was set upon it, and from some more old boards a cover was fashioned and covered with linoleum scavenged from a rubbish heap. The frames for the super had not been nailed and I didn't have enough foundation to fill them. So, they were nailed up in a hurry, and the foundation that I had was cut into strips to give them starters.

It said in the book to cut the branch and lay it down in front of the new hive. The bees then would go in by themselves. What the book did not say was how one man could cut off a six inch limb twenty feet up in the air and gently lower it to the ground.

A compromise was reached by getting a corrugated box, climbing out on the limb (in more ways than one) and brushing the bees into the box. This was very educational. Like the frog in the well, he jumped up two feet and fell back three.

**To make a long story short,** I finally managed to get most of them into the box, and thence into the hive. This was about four in the afternoon, and I had been at it since noon. I didn't get any lunch, but I had found out a lot about how not to handle bees. And don't let anybody tell you that bees never sting when they are swarming.

What I started out to say before I got on this line was that if you intend to keep bees, you have to stay three jumps ahead of them. If I had had the proper equipment ready for use it would have been no trick at all to get that swarm down and hive them.

The moral of this tale, if there is a moral, is that February is a fine time to get your equipment in shape if you are an old beekeeper, and to get your equipment if you are a beginner. Equipment is still scarce on some numbers and it is not too early to begin to get together what you will need.

**Get your supers repaired, or nailed up.** Fit them with good strong frames, wired, and filled with good foundation. Don't use cheap foundation: It's too dear. Paint up any old equipment. The paint may not do much good, but it should give you a little pride of ownership to see it spic and span when you put it out in the yard.

Get as much done as you can before your bees have to have it. It will save you much agony when the time comes to use it. Believe me, brother, when you need it, you need it.

[It would be interesting to know how many stray swarms of bees captured during the height of the swarming season, are put into old boxes, kegs, or what not, instead of modern movable frame hives. The lamentable fact is that a large percentage of swarms remain in box hives for some years instead of being transferred in modern hives. At least Propolis Pete had the right Idea—even though he didn't happen to have a hive he concocted one in order to give the swarm a modern home.—Ed.]

# National Beekeeping Industry Meeting at Indianapolis

All who attended the National Beekeeping Industry meeting at Indianapolis were impressed with the atmosphere of understanding and willingness of the various segments of the industry to work together. The meeting was well attended and included representatives from the entire country, as well as Canada.

The program of the meeting covered a conference on January 14 of the Apiary Inspectors of America, also a meeting of the Directors of the American Honey Institute.

On January 15 the National Honey Association members (honey packers) met and discussed the difficult situation which now confronts packers in obtaining supplies of honey.

On the same day the Bee Industries Association (bee supply manufacturers) discussed the scarce lumber situation and studied proposals to make lumber available for bee supplies.

At the first business meeting of the National Federation, President John W. Holzberlein, Jr., reviewed plans for the future and also the financial requirements to accomplish these aims. He also urged that beekeepers keep their sights high. Mr. Holzberlein was re-elected President of the Federation, Lewis White of Portland, Oregon, replaced Woodrow Miller of Colton, California, as Vice-President, and Glenn O. Jones of Atlantic, Iowa, was reappointed Secretary-Treasurer. The affiliating membership cost will continue at 5c per member.

The Constitution was amended so that all members can vote for their regional representatives. The regional representative must be a delegate from the affiliated association. The individual memberships will continue at $5.00.

Enthusiasm for the Federation can be judged by the raising of $1,500 through $50 and $100 donations by representatives of Zone 3.

The Committee on Uniform Caps for 60-lb. cans reported that two can companies will cooperate and others may be expected to follow suit.

President Lewis Parks and Director Harriett M. Grace of the American Honey Institute discussed the work that the Institute is performing in its promotion work for honey.

The Research Committee through Chairman Ralph Barnes made a report which was supplemented with a mimeographed copy, and urged that the National Federation support all agencies in Bee Culture Investigation in obtaining the appropriations necessary to carry on an extensive program of research as outlined.

New representatives of the American Beekeeping Council were elected as follows:

**National Federation:** Woodrow Miller of Colton, California; Charles Hoffman, of Janesville, Minnesota, replacing Oscar Schmidt of Bay City, Michigan; Burel Lane of Trumansburg, New York, replacing Roy Herr of Lancaster, Pennsylvania; Ralph Barnes, Oakland, Nebraska; Lynn Dewey of Merrit Island, Florida, replacing G. G. Puett of Hahira, Georgia.

**National Honey Association:** John H. Paton of New York City; L. W. Beyer, Jr., of Cleveland, Ohio.

**Bee Industries Association:** Roy Grout of Hamilton, Illinois; Alan Root of Medina, Ohio.

Chairman Woodrow Miller outlined the purpose of the Council as that of a coordinating body to direct the efforts of the three industry organizations represented. He felt it should also do some future thinking.

James I. Hambleton, Chief of the Bee Culture Laboratory at Beltsville, Maryland, announced the preliminary work now being conducted by the Bee Culture Laboratory on the use of American foulbrood in fighting human diseases in a manner similar to that of penicillin. These experiments may be far reaching for both the beekeepers and the general public.

Editor Elmer Carroll of The Beekeepers' Magazine in discussing the Veterans' Rehabilitation Committee report pointed out that at present there are still too few veterans wishing to work with bees to supply the demand.

James E. Starkey of Indiana reporting on the Beekeepers' Rights Committee urged that the Federation support the individual states in their fight on the misuse of dusting poisons where it is damaging the bee population.

C. B. Wilsie of Iowa State College graphically showed the value of honey bees in pollinating red clover.

One of the most interesting talks was that made regarding soil conservation and the honey bee by R. L.

von Trebra of Milwaukee, Wisconsin. He pointed out that soil is dependent upon the honeybee. Bees pollinate the legumes that furnish nitrogen that grows the grass to retain the soil. He also pointed out the relationship of public health to soil fertility.

Harold Clay of the United States Department of Agriculture, Washington, D. C., urged the industry to so think and plan that such programs as a floor price for honey will not be needed.

The Committee under Chairman Dr. E. F. Phillips of Ithaca, New York, in discussing the quality of honey, urged that honey qualities be maintained and that package quality be kept at a high level.

Dr. W. E. Dunham of the Ohio University, chairman of the Plant Committee, reported on the progress being made by that Committee.

One of the high lights of the meeting was the banquet. Woodrow Miller ably presided as toastmaster with his running comments concerning personalities present. Dr. H. E. Barnard spoke briefly on the early history of the American Honey Institute of which he was at one time Director. Music and songs were led by Roy Grout ably assisted by a professional trio of violin and two accordians. M. S. Stone, of California, in behalf of the Bee Industries Association, presented Alan Root a token of appreciation for his efforts to obtain material throughout the war for the supply manufacturers.

Much of the success of the meeting can be directly attributed to Federation Secretary, Glenn O. Jones of Atlantic, Iowa, for the smoothness with which the whole convention moved. His quiet friendly manner did much to make everyone feel at ease.

## New Procedure for Securing Sugar for Feeding Bees

To State Apiarists and State Extension Specialists in Beekeeping.

We have recently been informed by the Office of Price Administration that effective January 1, 1946, the rationing responsibilities formerly handled by local OPA offices, including the approval of certificates for securing sugar with which to feed bees, have been transferred to District OPA offices. It will therefore be necessary for beekeepers to submit their requests for sugar for bee feeding direct to OPA District offices. There are 66 such offices in the country, including at least one in each State.

A revised application sheet, OPA Form R-356, Devised December 1945, has been prepared, and can be secured upon request to your nearest OPA District office, the address of which can be furnished by local OPA offices, many of which are being continued for purposes other than rationing. When applying for sugar for this purpose, allow for more delay than was experienced when local OPA offices were authorized to grant these requests.

The regulations approving the authorization of sugar for feeding bees have been clarified somewhat and are included in the latest OPA revision, headed "3d Rev. RO 3," and Supplement 1 of this order, both issued December 29, 1945 and effective January 1, 1946. The substance of the order has not been changed: "A beekeeper who needs sugar for feeding his bees may get sugar for that purpose in an amount not to exceed 10 pounds per calendar year for each colony of bees. (Each newly-installed package of bees and each queen mating nucleus shall be considered a full colony.)" In addition, "if additional sugar is necessary to prevent the loss of his bees," a beekeeper can obtain a certificate permitting him to obtain not to exceed 15 more pounds of sugar per colony, upon certification by the local County AAA Committee representative.

Please see that beekeepers in your area are advised of these changes in OPA regulations and procedure.

Harold J. Clay
Chief Honey Section
Special Commodities Branch,
U. S. Dept. of Agriculture
Washington, D. C.

# *Eighty Years* Among the Bees

By E. R. Root

### Old Hens . . . and Door Knobs

The sub-title was suggested by a paragraph from an excellent article by Jay Franklin in the Cleveland Plain Dealer. I quote:

> The hen sitting on a door knob has long been a symbol of instinct gone silly. Yet the postwar policies of three great nations have shown foreign offices and diplomats still nesting maternally on top of political attitudes which no longer have any real meaning.

I just wonder if there are some old hens nesting on door knobs in beekeeping. In late issues of Gleanings I have been referring to some of the "ain't so's" that are almost as silly as instinct gone silly. I refer to the folly of contraction of the brood nest of the pollen theory, the Dickel theory, and, particularly, to the sting-trowel theory. The worst of it is these did not originate from instinct gone silly but rather from an intelligence gone wild.

Samples of intelligence gone wild, if not silly, are shown by the very large number of patents issued to beekeeper-inventors who honestly believed that their patent hive or bee feeder would revolutionize the whole business of keeping bees. The Heddon hive, referred to on page 335 in ABC & XYZ of Bee Culture, is a glaring example of a craze that occupied pages of space in the bee journals in the middle 80's. It was seductive and attractive. Hundreds fell for it. Today it is more dead than the hen's door knob.

Of the hundreds of patented bee feeders there is not one that is better than a tin can or a Mason jar with small holes punched in the cap. A lot of other patented gadgets are just as useless.

Then there were the patent right swindles of the late 60's and early 70's of which the Lizzie Cotton controllable hive was an example. It caught the unwary right and left. The patent right idea soon went into disrepute. The scheme was to sell farm or county rights to use or make certain moth trap patented hives. Not one of these was any more useful than the old log gum or box hive of our forefathers. They too were as silly as the hen's door knob.

**Again, in the early 80's came the sugar fed comb honey.** It was believed by some honest beekeepers that intensive agriculture had crowded out all the clover areas and, therefore, we would have to feed bees sugar syrup to get any honey, or beekeeping would be a thing of the past. Even though the product was to be sold for just what it was, the consuming public turned it down and so did beekeepers. Here again was door-knob philosophy. The honey could not be sold for enough to pay for the sugar.

Another door knob of the 80's was the so-called Wiley Manufactured Comb Honey Lie. This was not the product of any beekeeper but that of the U. S. Chief Chemist, Harvey W. Wiley. He put it out as a scientific joke which he thought no one would believe; but the consumer did believe it was the product of "Yankee genius." The papers were full of it in the 80's. Dr. Wiley saw his mistake but too late to correct the damage* Today the canard is as dead as the hen's door knob. (See page 26 last issue.)

### The Problem of Reconversion in Beekeeping

The war which has just closed has brought new problems to the beekeeper. While there was a shortage of competent bee help it looks now as if the returning veterans will more than supply that shortage. If so, they will ask for higher pay. Will the ceiling prices on honey cover that advance and leave a profit to the beekeeper? Again, will those ceiling prices on honey hold their present levels when sugar becomes available?

The beekeeper may have to do all the work himself. He may have to cut down on the number of his colonies. His old pastures may fail him, and he may have to move, but where? He will have to diagnose his colonies by surface indications. He cannot look over all his combs—the foulbrood inspector will have to do that. He will pay more attention to a higher grade of queens. He will make sure that there is plenty of pollen or pollen substitutes in the hives.

*[Dr. Wiley, in spite of his mistake which he greatly regretted and which he tried to correct, was sponsor for the National Pure Food Law of 1906. Before that time honey could be adulterated with glucose. He was not only a great chemist but at the time the most powerful advocate of pure food honestly and properly labeled.—Ed.]

In support of all of this, our government workers at Madison, Wisconsin, have already proved that the use of higher grade of queens and a very liberal increase in pollen or pollen substitutes, in the colony will enormously increase colony averages. What government men are able to do and have done, intelligent bee men should be able to accomplish in the future if they have not already done so. For the present, the commercial beekeeper may not be able to hire enough experienced help.

All of this applies particularly to the commercial beekeeper. The backlotter who keeps bees both for pleasure and profit will have time to look over colonies and see every comb because he is studying with a great deal of interest not only bee behavior but how to make that behavior produce more honey. He can set his hives out in straight rows on a beautifully kept lawn on his backlot. The commercial beekeeper, on the other hand, cannot afford to level up the ground for his outyards. He doesn't know how long he will occupy those locations.

He will place his hives in irregular groups to prevent drifting—two here, three there and five in another place but never in regular lines.

He has also learned by experience that if there is any foulbrood in the locality when hives are placed in rows, the hives that face the same direction in the row and especially next to the one having disease will get foulbrood also because the flying bees make a mistake and go into the wrong entrances. The commercial beekeeper knows this and so his hives are irregularly placed in a sheltered location. If it is without shade, they should face South but never North nor West.

When he packs, he will not put two or four colonies in one packing case on account of drifting in the spring, one colony coming out too strong and the other too weak. One will swarm and the other will be of no value in honey production.

He will not jump to conclusions that because he is able to get ceiling prices on his honey **now**, he will continue to get those prices after sugar becomes plentiful and lower priced.

It is said that history repeats itself. While it is not believed that honey will fall anywhere near in price as it did after the first war, it is well to take into consideration that its future earnings may be based on a lower price per pound than is now being received.

### Atomic Bombs and Rocket Planes in Bee Culture!

At the beginning, Mr. Franklin told how the atomic bombs and rocket planes have or will change the future foreign policies. Are there any rocket planes or atomic bombs in bee culture? A few fear that the new insecticide, DDT, may prove to be an atomic bomb that will destroy our apiaries. The answer thus far is negative. We do have a new-old disease called Nosema that should receive our careful attention. Authorities disagree; they all agree that it is insidious and often unseen even when present. When of two colonies, well packed, same stock, same strength, one dies or is weak and the other is strong, we may guess that Nosema has something to do with it. Again, there are some colonies that will fall short in honey production — below the average in the apiary and yet the same strength and the same stock. Here again Nosema may be working unseen pulling down materially the earning power of the colony. To offset all of this, we have the **hope** but not the final proof that sulfathiazole tablets may reduce our loss from foulbrood. Beginners who find something wrong with their brood should consult their foul brood bee inspector and then follow his advice.

Marjorie Ann Kinard of Louisville, Miss., unafraid of bees, helps her father in the apiary.

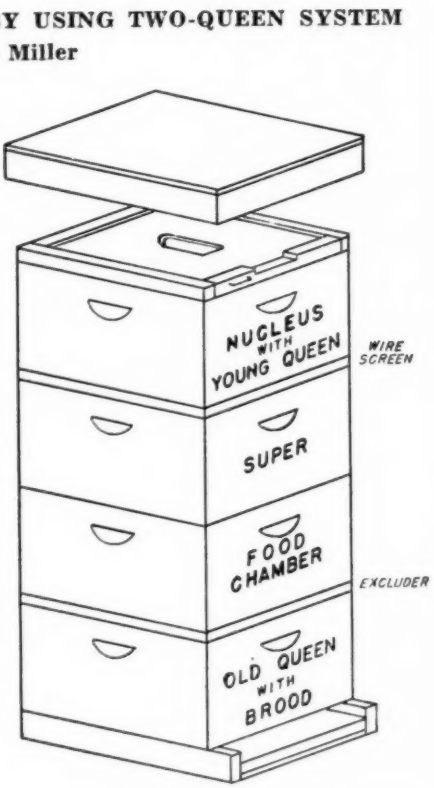
# From the Field of Experience

## REPLACING FAILING QUEENS BY USING TWO-QUEEN SYSTEM

By E. S. Miller

The following scheme for spring requeening of slow colonies worked quite well during the past season:

The bees are wintered in two-story hives. About the beginning of fruit bloom the queen is confined to the lower story and a third story of drawn combs or foundation added. A nucleus is then made up in a regular hive body with a young laying queen and frames of brood and adhering bees taken from a strong colony, then filled out with combs and sufficient honey to prevent starvation. It is then placed as a super above a wire screen on top of the colony to be requeened and given a small entrance. In about two weeks, when the new queen is well established, the wire screen is replaced by a queen excluder and the two queens allowed to cooperate until the clover flow is on. The old queen is then dispensed with and the two brood chambers interchanged, the top section containing the young queen being placed at the bottom under an excluder. The use of the wire screen is to prevent the bees deserting the nucleus.




Although this is not considered a good location for honey production, colonies treated as above stored approximately 225 pounds each, considerably more than the average for the yard. None has swarmed. I have tried this plan with only a limited number of hives but hope to experiment further next year. It may be worthy of trial by others.

It will be observed that the plan is similar to what is known as the two-queen system. The object, however, is the early replacement of inferior or failing queens and at the same time insuring stronger colonies for the clover flow by the use of two queens through the building-up period.

I have found also that colonies requeened early produced more honey than did those with wintered-over queens. With modern methods of beekeeping with bees in ten-frame hives of five or more stories during the honey flow, it may be found profitable to requeen annually early in the season if good queens can be obtained at that time. Furthermore, there seems to be no good reason why package bees with queen can not be united with slow colonies in the manner above outlined with a resultant increase in production. It may be preferable to purchasing queenless packages for strengthening weak colonies with old queens.

Valparaiso, Indiana

## CELLAR WINTERING AND MICE

By E. S. Miller

In more than 35 years of cellar wintering, with full ⅜ inch entrances, I have never known mice to enter the hives while in the cellar. Unless the temperature is allowed to go below 40 degrees, the bees will keep them out.

Valparaiso, Ind.

## DEPARTMENT OF AGRICULTURE SUGGESTS INCREASE OF 8 PERCENT IN COLONIES OF BEES

(Written by Harold J. Clay, Chief, Honey Section, U. S. Department of Agriculture, Washington, D. C., January 10, 1946.)

This year the U. S. Department of Agriculture is for the first time calling for a definite increase in the number of colonies of bees in the country. The proposal is for 8 percent more colonies than were handled in 1945.

Although goals for bees are new, for the past five years the Department has been suggesting production goals for major crops and livestock, and for livestock products. In previous years most of these goals called for an increase over the output of the preceding season, as during the war producing "too much" was considered nearly impossible. Now that military needs have lessened, however, many goals for 1946 represent requests for smaller production than in 1945. Not so with bees.

### Bees More Essential Than Honey or Beeswax

The reasons why the country needs more bees are well known to those who have been reading this or other bee journals. The present demand for honey at ceiling prices cannot begin to be filled; and beeswax continues to crowd the former ceiling price, which was suspended by the Office of Price Adminisration on October 29, 1945.

But in its Bee Goals statement, issued in December, 1945, the Department of Agriculture said that the primary need for bees is for their activity as pollinating agents, which has a value conservatively estimated at 10 to 20 times the value of the honey and beeswax they produce. It is increasingly realized that as other pollinating insects decrease in number, due to spray poisoning, clean cultivation, or other factors, honey bees are needed in larger quantities, even to maintain the pollinating work of insects that have been destroyed.

### Seedsmen of Country Recognize Essential Need for Bees

Producers of legume seed are especially persuaded that more bees are needed, and have followed closely the convincing experiments made by State and Federal research workers in commercial legume seed areas. The title of Ohio Extension Bulletin 253 issued in April, 1944, "Honeybees Increase Clover Seed Production 15 Times," summarizes the attitude of many seedsmen regarding the importance of bees in the pollination of clovers. Department Bulletin E-584, issued by Dr. James I. Hambleton in December, 1942, and headed, "The Dependence of Agriculture on the Beekeeping Industry," has been widely circulated among beekeeping leaders and seed producers, and has been instrumental in opening the eyes of many of them to the essential nature of bees to present-day agriculture.

While the over-all goal for colony increase is 8 percent, that does not mean exactly 8 percent more colonies for every State in 1946 than in 1945. The needs of each area were studied, and suggested goals prepared for each State. These ranged from 100 percent of the 1945 figures to 145 percent. State Apiarists and State Extension men in beekeeping were sent complete copies of the goals program and were asked to give publicity to the proposals for their States.

### Colony Increase Since 1940 24 Percent

If sufficient hives and other bee supplies can be made available to beekeepers, an increase of 8 percent in the number of bee colonies should not be too difficult for the country to reach. In spite of labor shortage and scarce supplies during the war, preliminary 1945 estimates of the Bureau of Agricultural Economics indicate nearly 24 percent more colonies that year than in 1940. Lumber supplies have been short, but the Lumber Branch of the Civilian Production Administration has expressed a willingness to cooperate with the Goals Program of the Department by giving bee supply manufacturers priority ratings for emergency lumber needs.

### Cooperation of Beekeepers Needed to Reach Proposed Bee Goal

Since the issuance of the proposed Bee Goals last month, many State leaders have already advised the Department of Agriculture of their acceptance of the proposed increases for their States as reasonable. At this writing not a single response has indicated that the goal proposed was too great an increase.

But of course the only way the goals can be reached is through the active participation and cooperation of the leading beekeepers of each State, especially the commercial men.

## CURTAILING LATE FALL BROOD REARING

**By S. H. Burton**

Late November and early December was mild and sunny, a belated Indian Summer, and the bees made frequent trips to their favorite watering place which is a good indication that considerable brood rearing is going on. This means more mouths to feed and increased consumption of stores which may be needed next spring. How to stop this late fall brood rearing, when the colonies are already overpopulous for winter, is one of our problems here in Southern Indiana. Of course, the stock answer is curtailed laying space for the queen but when the bees eat the honey out of the cells in their daily needs leaving ideal egg laying space there is very little that can be done about it. Egg laying space can be reduced by confining the queen to the upper story, thus reducing the number of empty combs for egg laying. Too many bees at the beginning of spring means early swarming and a shortage of stores.

Washington, Ind.

[There appear to be two schools of thought on this matter, one that colonies are never too strong and, two, that brood rearing should be curtailed or encouraged to suit conditions in different localities. It would seem that populous colonies, even though they do require more food, are likely to be most profitable. However, when colonies reach their peak of strength before the major flow starts, instead of when it starts the owner has to meet this situation with skillful colony manipulation.—Ed.]

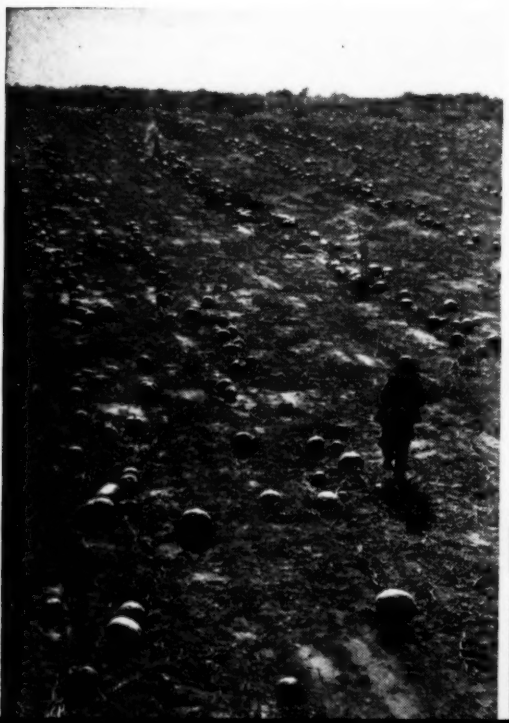
## PUMPKINS NEED BEES

**By O. V. Gordon**

The Beaver Canning Company, of Grimes, Iowa, were never able to raise good quality, nor sufficient pumpkins for their canning purposes —one of the biggest canners in the state. They assumed it must be because of the hybrid corn in the State. But this year, in this field (shown in photo) they placed the equivalent of 40 hives of bees in a 40-acre patch. Result: One of the best pumpkin yields they have yet enjoyed. Nor was it particularly a good pumpkin year, as measured with other products.

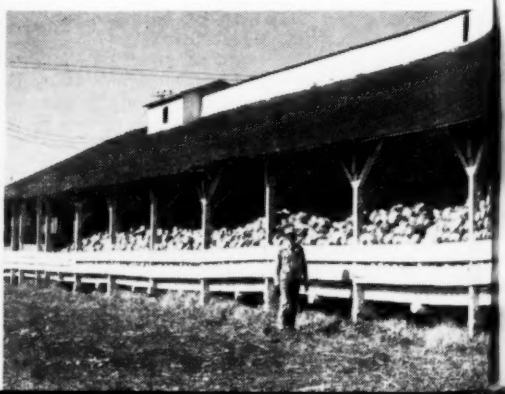
Mr. Wright, manager of the company, tells me he thinks it was the bees that did it; they will use them henceforth. In the photo are some of the pumpkins just before being harvested (with pitchforks tossed into t r u c k s and carted into the plant). They have 400 tons of pumpkins lying in the shed at present (October 31, 1945) awaiting canning.

Des Moines, Iowa.



**Right: Pumpkins! Beaver Valley Canning Co., Grimes, Iowa.**

**Below: Mgr. Wright of the Beaver Canning Co., with 400 tons of pumpkins, part of this year's crop, bee-pollinated.**



## SCOUT BEES

**By B. P. Sieber**

It would be interesting to know approximately how many scout bees a swarm sends out and how they communicate and decide on which location to accept for their new home, provided more than one suitable location is discovered. I believe that a swarm sends out more scouts than we may think.

On one occasion I had some bees near a coal mine. One day an after-swarm was hived in an empty spike keg to be returned to the parent colony in the late afternoon (I find that they stay put better when held until the afternoon of the next day).

About 11 o'clock the following morning the mine top house workmen notified me that my bees were about to take possession of the top house. I lighted my smoker and on investigation found perhaps 150 or 200 bees exploring the cavity in one corner of the building. Some were coming and some going in the direction of the keg containing the swarm, which was about 200 yards distant. Smoke failed to stop their eagerness to explore, so I abandoned the hope of stopping them with smoke and went for a can of Bee brand insect powder. Returning with the insect powder, which had taken scarcely ten minutes to secure, I found the number of scouts had increased to approximately 300 or more. The insect powder moved them very promptly forcing them to look elsewhere for a home which they probably found about four hours later as the swarm left for parts unknown about mid-afternoon.

Some think that swarms usually have a location selected before they swarm. This may be true in most cases with prime swarms, but I have known after-swarms to remain clustered two or three days before departing. I have known a prime swarm to issue and without settling make about a fourth of a mile circuit down through a field then return and enter an empty box in the yard.

It would be interesting to know how the scouts guided them, and how they distinguish these scouts from other bees of the swarm.

Belle Ellen, Ala.

## RELATION OF QUEEN'S CHALLENGE TO SWARMING

**By Paul K. Easley**

In the "Asked and Answered" section for October I believe both Mr. Guimares' question and the answer to it somewhat miss the point. I have heard the "zeep-zeep" of the queens several times in colonies which swarmed soon afterwards. This last May in my locality was a very good example. After getting a good fruit flow the weather turned cold and rainy and strong colonies with some surplus decided they were crowded and prepared to swarm.

The first major preparation is to start cells to replace the queen they intend to take with them. If the swarm does not emerge soon for some reason or other, as happened this May due to cold rainy weather, there will eventually be several virgins in the hive in addition to the old queen. The bees still intend to swarm so they keep the ladies from murdering each other. As soon as a nice warm day comes a colony in this condition will literally swarm itself to death. The virgins go out to mate and the workers, tired of being confined, go along. Until they leave, however, the queens challenge each other with their "zeep-zeep". It is the nature of a queen to challenge another when she knows of the other's presence.

The best time to hear them is just after sundown when the roar and activity of the day has settled down to the murmur of "boiling down" the day's take. They sometimes call loud enough to be heard 10 to 20 feet from the hive. One will call, then will be answered by another.

It is possible to tell how many are taking part by the difference in their tones as no two are of quite the same pitch. This condition of more than one queen in the hive can usually lead to only one of two things: a fight until only one queen survives or swarming. When one hears two or more queens challenging he can be pretty certain the colony will swarm if let alone. However, the "zeep-zeep" can hardly be called the cause of the swarming. It is in reality the result of preparations already made to swarm.

Anderson, Ind.

## SECOND GLANCES
### By C. M. Isaacson

**Yes, beekeeping pays!** Mr. Woodson is but one of the many who have found that out with certainty. It pays in money, of course; thru lean years and good years the careful operator can find this reward from his bees. But other professions also pay thus—many perhaps with much higher returns financially. Yet have you noticed the small proportion of beekeepers leaving their vocation permanently when once they are well in? There is something that holds one—and it pays! (page 1).

**Marketing of honey** is not a simple problem when large amounts are involved. Newman Lyle points out quite clearly this fact in his article (page 3). It takes time, it requires equipment, "know-how", knowledge of what to pack (and how much of each type) for each market, and many other things which can be best had by specialization in marketing alone. Yet if the beekeeper wishes to retain some influence on his honey after it leaves his hands, the answer seems to be a cooperative. The Sioux Honey Cooperative, by operating efficiently and conservatively, yet in large volume and with modern methods, has justified its existence, both in financial returns to its members and in services rendered. Mr. Lyle presents a very strong case to show why so many of us in this middle west territory have joined this organization.

**A simple AFB field test,** which is at the same time reliable, is most certainly a development of real value (page 6). The Bee Culture Division of the Bureau of Entomology has given beekeeping as a whole a very definite service by this research. That the materials needed, simply milk and water, are such easily obtainable ones, adds even more to the method's desirability.

**"Experience is a good teacher,** but the tuition comes mighty high." That some are willing to share the knowledge gained from their mistakes helps to make the cost to the rest much lower. A. I. Root was one who did so gladly. And if the series of articles to come by "Propolis Pete" can contribute along the same lines, he, and Gleanings, will have a vote of thanks due them. One point mentioned—that many instructions are so complicated as to be bewildering to a beginner—is true. More power to any effort to simplify them! (page 8).

**Arsenical sprays** are even beginning to become a matter of concern in England, although not serious as yet (page 9). George Carter mentions the research beginning there on the toxicity of DDT, especially in relation to honeybees. This ties in with Editor Root's comments on page 16. As he says, it may develop that DDT may actually prove to be a boon to beekeeping (by making arsenical sprays obsolete) instead of the menace many have feared it to be. We never know—and this may prove once more the futility of preformed opinion.

**Do workers destroy queen cells?** Yes, they often do—Mr. Pease is correct. But so do virgins—in fact, I have seen them at their work, very busily engaged in tearing through the wall of a cell containing a **ready-to-emerge sister** (she often will not touch a less mature cell). But it is the **bees** that determine whether or not she is allowed to. And don't speak of a "weak little virgin"; sometimes this is true, but often when bees prevent emergence for a day or two, she comes out strong and "fighting mad" (page 10).

**Tip your hat to your bees** (page 18). Mr. Wood, in his "looking backward" tells of an old custom that contains, as he says, more than a little sense. Many of us owe much in livelihood and health to our busy servants. His item is of real interest, with its quotations of quaint language and recordings of old myths and beliefs (such as the one supposedly the reason for parthenogenesis in honeybees.)

**Oddities in beekeeping** (page 21). We've all seen them, but we do not all record them for others' interest as Mr. Teasley has done. That swarm catching basket—I'm not accusing you of anything, Mr. Teasley, but you know the old saying that so many of our inventions are made by lazy people! (I'd like one or two of those baskets myself). But the bee impaled on the barb, if you didn't see it, I'd be inclined to suspect a shrike (if they are native to your locality).

**Bees not prohibitionists!** If only "Old Drone" of past Gleanings days were around now. He and his partner, "Ab," would surely contact you, Mr. Lane. (page 23).

# HOMEMAKING CHATTERBOX

**By Mrs. Harriett M. Grace, Director**
**American Honey Institute, Madison 3, Wisconsin**

Note:—The men may fail to realize how important the women are in creating and maintaining consumer interest in honey. Let's not forget it is the women who put honey on the table. This page from the American Honey Institute is most welcome.—Ed

Now that Ground Hog Day is past, we know that spring is somewhere in the offing. With the new season will come a new crop of fresh fruits to give variety to springtime menus and to preserve for use next winter. So, now is a good time to start using up your supply of canned fruits from last year.

In response to requests for something different in the dessert line using canned fruits, we have picked out a recipe for Fruit Rice Ring that is certain to perk up winter weary appetites, and tastes much, much better than the bitter-tasting concoction that enjoyed popularity for years as a spring tonic.

**Fruit Rice Ring**

3 tablespoons cornstarch, ½ teaspoon salt, 2 eggs, 1½ cups milk, 1 tablespoon butter, ¼ cup honey, 2 cups cooked rice, canned fruit, drained.

Put cornstarch and salt in top of double boiler. Add egg yolks and milk. Stir well. Cook over boiling water, stirring constantly until mixture thickens. Remove from heat. Add butter, honey, and rice. Fold in stiffly beaten egg whites. Turn into buttered ring mold. Bake in moderate oven (350 degrees F.) 30 minutes. Cool. Unmold carefully. Fill center with canned fruit. Serve plain or with whipped cream.

* * * *

When you drain the fruit for your rice ring, don't discard the juices! It is a good plan to have a quart Mason jar in your refrigerator, ready to pour all your left-over fruit juices into. When you make gelatin desserts or salads, use the juice in place of part or all of the cold water. Or, use it in making fruit punch. It will add not only extra flavor, but extra food value as well.

* * * *

We have a question here on how to remove a package of meat from the freezing compartment of the refrigerator when it has become frozen in solidly. One of the easiest ways I know is to put the vaccúm cleaner to work on it. Wash off the nozzle attachment and connect it to the cleaner. Direct the air suction all around the package until it thaws out enough to be removed without jarring the unit. Never, under any circumstances, go at the job with an ice pick or other sharp instrument, and don't try to jerk the package free, as the unit is easily damaged that way.

* * * *

Another "how to do it" for a woman who saves her meat drippings to use in making spice and chocolate cookies and cakes, is this tip on an easy way to separate the fat. While the fat is still hot after the meat is cooked, pour it into cold water and boil with a piece of raw potato for ten minutes. Pour the mixture into a wide mouthed jar or a deep, narrow pan and allow to cool. The potato will absorb the strong flavors and odors and the sediment will settle into the water, leaving a clear, solid layer of fat on top which can be easily removed.

* * * *

Something which will be of interest to all homemakers, and especially to those with very small families, is the news that one of the large commercial bakeries has developed an electronic oven through which all of their baked products are passed for just a few seconds. This brief treatment keeps the foods free from mold for weeks, by destroying the spores, without affecting the taste, texture, or nutritive value. This should be a tremendous help in homes where a loaf of bread lasts a long time.

* * * *

Skipping from foods to fashions, while people are still wearing heavy coats, it might be well to mention that if you will avoid carrying purses or packages under your arm, your coat will last much longer, for it is the constant friction which wears off the nap from the fabric or fur. If you must carry them in this position, change sides frequently to balance the wear.

# Asked and Answered

### Scaring Birds Away From An Apiary

Question.—I have recently had trouble with bee-eaters (we have here in Cyprus a bird of medium size, that fly in groups over the apiaries and catches bees with its long bill). I don't know any way I can force them to fly away. If I cry loudly, or if I strike on an empty tin, they pretend they hear nothing. If I fire a gun, they will go away for some minutes and then return again. Do you know any better way? Would any large articles of curious appearance placed around the apiaries make them afraid? — George P. Georghiou, Cyprus.

Answer.—It would be our opinion that if you used a shotgun and shot the birds down a time or two during their visitations and hung their carcasses on a line near by for a day or two, it would end your trouble. You might have to repeat in a month or two. As you say, the firing of a gun will drive the birds away, but when they see carcasses hanging up, it should be a warning, at least it is with our American birds.

### Examining Colonies for Swarming

Question.—How often should hives be examined for swarming?—Lester L. Hare, Ohio.

Answer. — During the height of the season, when honey is coming in rapidly, it seems advisable to examine colonies at least once a week, especially if section comb honey is being produced. When extracted honey is produced, less manipulation of colonies is required. The main thing is to get supers on in plenty of time to avoid congestion in the hives. As you may know, congestion is considered the main cause of swarming.

### How to Get Combs of Partially Granulated Honey Emptied

Question.—I was a little late in extracting some goldenrod and aster honey, consequently some of it has granulated. I have about four or five supers in which the honey has more or less granulated. Can I get the granulated honey out?—W. E. Grossman, Ohio

Answer.—It is sometimes difficult to get such combs thoroughly cleaned up. The best way we know of to do this is to place each of these supers under the brood chamber of a strong colony, just as soon as the weather is warm enough next spring. These supers should be given to the bees rather late in the evening to avoid getting the apiary stirred up. Furthermore, the entrances should be reduced down to about two or three inches by ⅜ inches, for awhile, at least, especially if the weather is cool. You will find that the bees will carry the honey up out of these supers placed below into the brood chambers above. The bees may remove some of the granules from the cells and drop them on the bottom boards. After the weather becomes warm, this granulated honey will be utilized by the bees. If you were to put these supers on top of brood chambers, even over an inner cover with the center block removed, the bees might not carry the honey down.

### Storing Combs Out of Doors

Question.—I left some supers outside piled on a metal cover with another cover on top. The pile is mouse and weather proof. I have been told that freezing will ruin the combs. Is this so?—J. Schemmel, Mich.

Answer.—So long as you have your piles of supers protected from the rain, and moth-proof, outdoors, they are not likely to be harmed. Occasionally, however, virgin combs may crack a little in your latitude, due to prolonged zero weather, but the bees will mend these cracks when settled warm weather comes, after the supers are put on the hives. It is preferable to leave the piles of supers just where they are. Handling them when the weather is cold might result in the breakage of some combs.

### Hives Too Close Together

Question.—I have eight colonies of bees. Would it be all right to move the four hives close together (side by side) and place the other four on top of those, then pack with hay on all sides except south? They are sheltered by a 20 ft. bank on the North.—Milton D. Kingsley, Pa.

Answer.—It is inadvisable to place your hives too close together when packing them for winter. Authorities are now advising packing each hive separately and keeping the hives some little distance apart to avoid having bees drift from one hive into another.

### Fermented Section Comb Honey For Spring Feeding

Question.—I have 40 pounds of comb honey I intended to feed my bees in the spring but find it has soured and is fermenting. Is there anything I can do except throw it out?—B. F. Hockenberry, Ohio.

Answer.—Concerning the feeding of your comb honey in the spring, the super containing the honey may

be set on the colony that needs feeding, late in the evening, some time during the month of March after the weather has moderated. If you were to put this honey on the hive during a warm day, the odor of the honey might start robbing in the apiary, assuming of course that there are other hives in the yard or in other apiaries nearby. Even though some of the combs may be fermented somewhat the bees will take care of this honey, especially after the weather has become warm. In the meantime, the combs of honey should be kept in a room of moderate temperature during the winter months.

### Handling Swarms With a Clipped Queen

Question.—I've never clipped a queen, but in doing so—does that end my swarming worries? Also, when bees leave the hive in an effort to swarm, and the queen being clipped cannot leave, and later the bees go back to the hive whence they started—do I let nature take its course from this point, or do I have something to do in connection with the already started queen cells in said hive, in as much as I do not intend to make an increase?—John Reinhardt, Mich.

Answer.—Clipping a queen's wing does not necessarily end swarming worries. The best swarm control measures consist in having each colony headed with a queen that is reasonably young and providing each colony with ample comb space for the storage of incoming nectar, a little in advance of the time the space is actually needed. This means putting on supers quite early to avoid congestion in the hives. In case a swarm with a clipped queen issues the queen not being able to fly is usually found near the entrance of the hive. If nature takes her course, the swarm will return to the hive and so will the queen if the alighting board is touching the ground so that the queen may gain entrance to the hive. If the hive happens to be up on a stand, some distance off the ground, the queen cannot get into the hive and consequently she is likely to be lost. If this should happen, a young virgin queen will emerge from one of the cells in the parent hive and become the mother of the colony. If you do not desire increase in your apiary and if you are on hand to handle the swarm properly when it issues, it is desirable, when the old queen is retained, to destroy all the queen cells in the brood chamber of the hive, put the old queen back, then raise most of the brood into a super above the queen excluder. This raising of brood tends to relieve congestion in the brood chamber below. If it is desirable to do away with the old queen, she should be killed and one queen cell should be left in the brood chamber. In due time a young virgin queen should emerge from the cell and will mate in about five days after she emerges.

### Upper Entrance For Winter

Question.—Can a 5/8" auger hole bored in or near the hand hold give sufficient ventilation if the hive is winter packed? —Earl F. Kreis, Ohio.

Answer.—A 5/8" auger hole bored in the upper brood chamber, near the hand hold provides an exit for some of the excess moisture during the winter months. Such moisture is more easily expelled through an upper entrance than it would be from the lower entrance. Quite a number of beekeepers over the country are using some type of an upper entrance to reduce the moisture content within hives during the cold winter months.

### Foam on Honey

Question.—I am having trouble with foam on top of my honey, the larger the jar the more the foam. It spoils the sale. Some think it is working. What can I do if anything?—J. H. Baxter, Mass.

Answer.—This foam may be due to the honey being slightly fermented. If fermentation is occurring, you may have to heat the honey to 160 degrees, leaving the honey at this temperature for about 20 minutes or a half hour, then cooling it. The containers of honey should be placed in hot water and the containers should rest on pieces of sticks so that the bottoms of the containers do not come in direct contact with the bottom of the boiler containing the water. If the honey is not fermenting, the foam may be gotten rid of by heating the honey to 160 degrees, letting it settle until the small particles of air have risen to the surface of the honey, then skimming the foam off the honey. To have honey remain in a liquid condition for the maximum length of time, until the honey is in the hands of the consumer, this honey that has already been heated, should, after it has been allowed to cool, be heated again and the caps put on while the honey is still hot. The honey need not be heated as hot the second time.

# Editorials

**Midwinter Flights in North Beneficial** During the winter of 1944-'45 bees in this area did not have a good cleansing flight from late November until late February. This resulted in some dysentery among colonies that had late-gathered fall honeys, especially aster.

Bees in northern Ohio had good winter flights on January 5 and 6, the mercury reaching 60 degrees F. We hope this warm spell was general throughout the North. When bees in the North have a good midwinter flight beekeepers feel reasonably sure of successful wintering, provided of course all colonies are populous and have an ample amount of food and adequate protection against the elements.

oOo

**The Danger of Improperly Processed Honey** The very fact that large buyers and packers are having difficulty in buying honey in quantities necessary to meet sales demand, indicates that many beekeepers are packing their own honey and selling at ceiling retail prices right from their doors.

All such should be careful to process the honey, not overheating it above 160°, nor allowing it to stand at that temperature longer than is absolutely necessary. It is equally important to strain the honey of all foreign particles. This can be done easily when the temperature of the honey is not above 130 degrees, and run through two thicknesses of fine cheesecloth previously moistened in water so that the honey will pass through.

It is important that the honey be strained as soon as it comes from the extractor. The uncapping knife will uncover cells containing some pollen and it is not desirable to have any pollen in ordinary liquid honey. Cheesecloth will remove all the coarser particles.

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**Beekeeping in War Torn Countries** There is much we do not know about beekeeping conditions in war devastated countries. A few interesting reports come from returned service men. It seems that at least some hives of bees escaped miraculously. In some instances, apiaries were hidden or camouflaged from the enemy.

Apiaries that were not destroyed or captured would naturally continue the storage of honey, where conditions were favorable. The owners of the bees, in many cases, were in military service and could not give the bees the necessary attention. This would, in some instances, result in swarming. At least, the hives would be well stocked with honey, because the owners were not on hand to remove the surplus. Such a situation, an ample amount of food, would seem to be favorable for insuring the perpetuity of bees in those areas.

A fighter plane pilot, a beekeeper, in a recent letter, tells about capturing a swarm of bees which was put into a concocted hive during the summer months. The bees worked hard and long each day. The hives gained in weight. The boys had visions of hot cakes and honey. Without advance notice, orders were received to move on to another area immediately. The hive of bees had to be left behind. The pilot has wondered since what became of the bees.

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**"We've Got to Have More Bees."** This is the title of an interesting and informative article by John A. Rohlf, appearing in the January, 1946, issue of The Farm Journal.

Such articles now appearing in magazines and the press should tend to make people more bee-minded.

Obviously, the rank and file of our people do not realize, as they should, how important honeybees are to agriculture.

The article by Harold J. Clay in this issue, page 89, emphasizes the importance of bees for pollination, especially at present when it is necessary to produce an abundance of food for ourselves and other nations now being rehablitated.

oOo

**Artificial Insemination of Queens** It seems possible, but perhaps not probable that the artificial insemination of queen bees may be practiced commercially. Even though the present technique of insemination is an improvement over what it was a few decades ago, it is rather difficult for the average untrained beekeeper to attempt.

If the insemination of queens could be done artificially on a reasonably large scale in the early spring when spells of cold weather prevent natural mating in the air, the production of queens could be increased. Unfavorable weather for mating frequently results in delayed bee shipments and reduction of the honey crop.

The value of artificial insemination would seem to be in selective breeding and crossing of races where definite knowledge of the drone is necessary.

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**Probable Shortage of Stores** Reports received recently from various sections would indicate a shortage of stores for bees. One commercial beekeeper said all of his colonies were short on food and that he could not procure enough sugar to supplement this shortage. He was about to move his bees to the Southland to take advantage of early flows there.

It seems probable that in some instances beekeepers may have removed too much honey last fall, leaving their bees on dangerously low rations. Such beekeepers have no one to blame but themselves. In some instances, however, owing to unfavorable conditions, bees did not gather enough honey during the season for winter food.

Bees do require an ample amount of food from late fall until nectar is again available in quantity the following season. There is a tendency at present, when honey prices are good, to take away too much honey in the fall.

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**Research Committee to be Commended** The January, 1946, issue of the Federation News Letter issued monthly from the office of the Secretary-treasurer, Glenn O. Jones, Atlantic, Iowa, contains an excellent report of the Research Committee headed by Ralph W. Barnes of Oakland, Nebraska. This report was given at the recent Indianapolis Federation meeting.

The Committee recently sent a questionnaire to key men and colleges over the country to secure a consensus of opinion if possible as to the relative importance of nine projects suggested by the Research Committee. The returns, after being carefully reviewed, showed the following order of importance:

(1), Stock Improvement; (2), Disease Control; (3), Improvements in Colony Management; (4), Honey Processing Methods and Equipment; (5), Economics, Statistics, and Marketing; (6), Nutritional Studies of Honey and Pollen, Including New Uses of Honey; (7), Pollination; (8), Plant and Insecticidal Poisoning; (9), Education Program.

It was suggested in the report that the National Federation, through the affiliated associations, try to establish a full time extension program for each state under the direction of a qualified apiarist.

As was brought out, our industry is unable at present to produce enough honey to meet a normal brisk demand. Many beekeepers are producing less honey than they should be producing, largely because of faulty apiary management, due to a lack of knowledge concerning the principles that govern success.

In spite of abnormal weather conditions and a lack of abundant nectar plants in some areas during the past few years, the average per colony production could have been doubled, if not trebled, had proper methods of apiary management been employed.

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**Subduing Vicious Bees by Anaesthetic** An interesting article appeared in the June, 1945, "Scottish Beekeeper," page 82, entitled, "Anasthesia for Vicious Bees," in which is described a technique for manipulating, with ease and without stings, colonies that have become unmanageable and dangerous.

The "dope" used is methylated spirit, 1 part; methylated chloroform, 2 parts; and methylated ether, 2 parts. These drugs should be kept separately and mixed as needed.

To quote from the article:

"To anaesthetize, rip off the quilt and immediately cover the exposed frames with the anaesthetic cloth. Start pouring the anaesthetic onto the cloth in a little stream up and down, starting at one side and working over to the other, but following up and covering the cloth with the board so that the mixture does not evaporate upwards . . . Probably the amount needed will be about a dessert spoonful . . . when the bees are found to be slowly moving about the comb they are in the desired condition . . . One soon learns the dose necessary."

References to this article in succeeding issues of "The Scottish Beekeeper" bring out the fact that when too much "dope" is used, quite a number of the drones and some worker bees are killed but the queen apparently is not easily affected. While the anaesthetic treatment may not be new, its use is perhaps justified, especially on our best producing colonies.

Generally speaking, however, it does not pay to tolerate vicious colonies because it is possible to change the temperament of such colonies by removing the old queens and introducing queens from a known gentle strain of bees. Some seem to think bees have to be cross to store large crops of honey. As a matter of fact, there are gentle strains that are superior in honey-gathering qualities. Gentleness and industry can be combined in bee breeding. This is a problem for our queen breeders to work on. As our country becomes more thickly settled and more hives of bees are kept in the future than at present it will be all the more necessary to have bees that are reasonably gentle to handle.

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**Upper Entrances With Bottom Entrance Closed for Winter and Why**

Mr. Ed Braun, Agricultural Scientist of the Dominion Experimental Farm at Brandon, Manitoba, favors a top entrance in the super cover with the bottom entrance entirely closed for wintering. To accomplish this the front rail of an ordinary super cover is cut away to leave an opening from 1½ to 3 inches wide by ⅜" deep. As the super cover is put on the hive **upside down** it leaves an upper entrance at the very top in front without cutting a hole in the top super. Nor is it necessary to make a covered runway from the bee escape hole to the front where the super cover is put directly upside down on the hive.

This, it will be noted, provides a double bee space over the tops of the frames. As the bee escape hole is closed the excess moisture necessarily passes out at the opening where the front rail has been cut away. Bees superannuated, or those suffering from dysentery, can likewise escape.

The size of the opening, says Mr. Braun, should be regulated to fit the climate. If the colony is packed especially at the top (which Mr. Braun recommends) the opening can be smaller than where no packing is used on top.

The late John Conner, New Jersey, and L. L. Langstroth in the 1873 edition of his book, recommended closing the bottom entrance. Both Mr. Conner and Mr. Braun say that a bottom and upper entrance together cause a current of air to continually pass from the lower to the upper entrance. By closing the bottom entrance entirely, this too rapid change of temperature cannot occur. Moist air, that is, excess moisture, will rise and pass out at the upper entrance.

Notwithstanding that the temperature goes down in Manitoba and northwest Canada to 10, 20, 30, and even 50 degrees below zero, the bees, by the arrangement, are able to winter successfully both packed and unpacked. Says Mr. Braun: "When it is very cold, the frost crystals will almost entirely close the opening in the super cover. As the weather warms up and the cluster begins to expand, these frost crystals will melt away a little at a time until a full opening is provided." In this way, in the very dry climate of the Canadian northwest, the internal temperature of the colony is under automatic control to a large extent.

When the weather moderates in the spring so bees can fly, the bottom entrance is opened full width if the colony is strong.

This general plan was submitted to our U. S. Bee Culture Laboratory at Madison Wis. Dr. C. L. Farrar in charge replied:

"We have used upper entrances with the bottom closed but discarded the practice because there were more mouldy combs in the second and third story hives. We have practically no trouble when we reduce the lower entrance to a one inch auger hole."

It should be noted that the climate in Manitoba is much colder and dryer than that in Madison, next to Lake Michigan. Our readers should take this matter of climate into account. Where it is very cold, low sub-zero temperatures prevailing over much of the winter as in the Rockies it is also very dry

Dr. C. B. Gooderham at Ottawa near the Atlantic Ocean was of the same opinon.

In any case we would not recommend our readers to try more than one or two colonies with bottom entrances closed.

# From North, East, West and South

**SOUTHERN CALIFORNIA, Jan. 3**

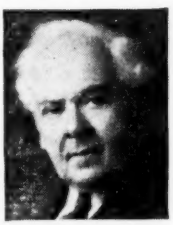
This starts our 26th year with Southern California items. May the future be as pleasant as the past has been.

**Weather:** Today finds us basking in sunshine during the day, with heavy fogs in some sections during the night, which roll back from the ocean for a distance of 40 miles. A rain of from three to four inches in December just before the holidays that reached well over Southern California made everybody happy, particularly beekeepers. The country was very dry and many were discouraged. Grass and all kinds of vegetation are coming on just fine and while it is nothing to get excited about beekeepers generally are very much encouraged, and with normal winter rains 1946 should be as good as or better than 1944 or 1945. We have had very few nights that were cold enough to warrant smudges to protect the orange or lemon trees. Poinsettias alongside our house have escaped, and they are very tender. They are now showing those deep red blossoms that are so showy during the winter season in Southern California.

**Miscellaneous:** One of the subjects discussed at some length in a meeting of beekeepers recently was that of branding hives, frames, and beekeepers' equipment. We have a law or custom in California whereby we can pay a certain amount and be allotted a certain number which is registered. Then we purchase a branding iron of these numbers and proceed to brand our equipment. This was brought about primarily to protect the beekeeper from thieves who were operating all too freely in different parts of the state. As is well known with the standard eight and ten frame hives and Hoffman frames it is very difficult once they are mixed with those of other beekeepers to pick out and prove ownership of your own. This proved successful so long as no bees were sold or hives of one beekeeper mixed with those of another. One man said he had bought several different apiaries and now has six different brands on his equipment. It seems to be just one of those things that we try for a time, cast aside, and are ready to try the next innovation that looks good.

Beekeepers are hopeful for 1946 and are busy repairing hives, painting, getting locations cleared of weeds and trash, even checking colonies for disease or stores. Very little disease is reported from the large apiaries but some feeding will be necessary. It is absolutely necessary to have plenty of stores if the colony is to build up for the early honey flow. A small colony will sometimes build up slowly and be ready to store surplus about the time the flow is over. It is the "whoppers" that store the honey when there is honey to be stored.— L. L. Andrews, Corona, Calif.

**NO. CALIFORNIA, Jan. 4**



**Weather:** Our first rain came in October and for a time there was every indication that the rain would be light. Early in December showers became more frequent and heavier so by the last half of December we were having a real rainy season. In the northern part of the State we have had heavy snows but very little cold weather. This guarantees a heavy flow from plants that make a good growth under the snow. Early in spring bees are moved in. The sun removes the snow, the bees get busy, and before the beekeepers realize it they have supers full of honey.

Our beekeepers have learned that it does not pay to work with bees in cold weather. The beekeeper's New Year commences early in the fall or just about the last extraction time. At that time the up-to-date beekeeper sees that his increase is made. He is sure that every colony has a good queen and ample stores that guarantee him plenty of young bees so that he is ready for the first honey flow.

Here in the eucalyptus district blooming has commenced. On account of our increased amount of

rain, which the great majority of producers welcome, the bees have had little time to gather nectar but they are watching for a chance to work. Even a half hour a day sees them coming in loaded with pollen and nectar. As a rule, at this time of the season if bees can have two hours of working time in the day they will store a surplus.

**Markets:** There is little honey in the hands of producers. There is less in stores. Everybody wants to buy and is disappointed when told "There is no honey."

**Miscellaneous:** Our meetings are so much better attended than we expected and this interest speaks encouragingly for the future. The talk about selling out has ended and all are deeply interested in preparing for the 1946 crop. Another encouragement for the future of beekeeping is the growth of honey plants at this time of the season. Our oldest beekeepers say they never saw them look so well at this time of year.—Cary W. Hartman, Oakland, Calif.

## NORTH DAKOTA, Jan. 5

**Weather and Honey Plants:** Winter settled down in real earnest in the fore part of December with temperatures of 20 to 25 below zero occurring almost daily for several weeks thereafter. However, there was a good blanket of snow to protect the clovers and other plants, so it is unlikely that they received injury.

In general, the plants went into winter in good condition and fairly well supplied with soil moisture. Some concern, however, has been expressed by beekeepers in the southeastern portion of the state that beekeeping there will remain at a standstill until the sweet clover acreage is increased. They also stress the need for continued research tending toward the development of sweet clover varieties which will more satisfactorily meet the needs of farmers and beekeepers than the present types grown.

**Colony Condition:** Reports indicate that colonies went into winter in much better condition with regard to bees and food stores than for the preceding year. The heavier and longer lasting honey flow of the 1945 season would account for this. Beekeepers attending the annual meeting of the bee association held at the Agricultural College, Fargo, December 14, expressed interest in the proposed national beekeeping goals, which for North Dakota would mean an increase in hives from last year's 22000 to 32000 for 1946. If this goal is to be reached there will probably be more packages of bees and equipment coming into the state than has occurred for any similar period of time in the past. Package bees will also be required to restock the hives of those beekeepers who continue to kill their bees in the fall and restock with package colonies the following spring. The occasional G.I. who stored most of his equipment when he entered the military service, is now back and will also be wanting package bees. The chances are that many of those who delay putting in their orders for package bees will be disappointed by not getting them in time, or not getting them at all.

**Miscellaneous:** At the 24th annual meeting of the North Dakota Beekeepers' Association held at the Agricultural College, Fargo, on December 14, Charles Hausmann, longtime commercial beekeeper at Hillsboro, North Dakota, was re-elected president. His reelection as president for the 25th anniversary year is particularly fitting in that he is one of the charter members, having attended the first meeting and assisted in getting the organization started. The Association has met once or twice every year since.

Beekeepers at the recent meeting expressed themselves in favor of holding the 1946 summer meeting at Detroit Lakes, Minnesota.—J. A. Munro, North Dakota.

## MANITOBA, Jan. 2

**Crop:** The wet, backward spring, characteristic of a large area of the continent, was experienced also in Manitoba. Packages were installed in bad weather and many colonies were still being fed in July. Some beekeepers continued feeding until the middle of July. Unfortunately the flow continued well into August which has been unusual in recent years. Accurate data on Manitoba honey flows has been kept for many years by Prof. Mitchener of the University of Manitoba and each

year at the convention he shows charts and indicates to the beekeepers trends in nectar secretion.

The crop was not good but due to the August flow was better than had been anticipated. Average production per hive is estimated at 81 pounds with a total production of approximately 5,000,000 pounds. In general, production was poorest east of the Red River, the average probably not exceeding 30 pounds, while around Portage la Prairie and in the western section, production in some cases exceeded 200 pounds per colony.

**Market:** Honey is still rationed as also is sugar. If restrictions on its purchase were not maintained honey would disappear overnight to sugar-hungry industries and it is considered preferable to keep a supply available to the honey consuming public. There is no difficulty in disposing of honey at ceiling prices. Just what will happen to honey prices when other sweets become available in normal quantities is something worth anticipating.

I consider that the marketing set-up across Canada is much better organized than it used to be and with some foresight and co-operation between the provinces the beekeepers should be able to have some influence in maintaining reasonable prices and orderly marketing. Manitoba Co-operative is handling approximately 2,000,000 pounds of honey and has established itself as the backbone of honey marketing in the province. All other important honey producing provinces now have reasonably successful cooperatives and so far they have indicated the happy faculty of working together inter-provincially.

To further co-ordinate the efforts of beekeepers on a dominion-wide scale the Canadian Beekeepers' Council was formed in 1939. It is composed of elected members from each province and it constitutes one body which can speak with authority for all beekeepers. Its function somewhat parallels that of the National Federation of State Beekeepers' Associations. This organization has already proven its worth and stands fair to do great things in the future in various fields, particularly nationwide honey boosting.

**Miscellaneous:** After 24 years of fine service to Manitoba beekeeping, Mr. L. T. Floyd retired as Provincial Apiarist. During the Association convention in November beekeepers showed their appreciation of his work by presenting him with appropriate gifts. The convention banquet was held in his honor.

After nearly four years absence in the navy I took over from Mr. Floyd and found it really great to be back among the beekeepers and their problems. It's a fine fraternity.—E. C. Martin, Winnipeg, Man.

## ARIZONA, Jan. 6

**Weather:** We have had fine rains over most all of the State the past few days, after two months of dry weather. Water is life to both man and plant life over the desert areas. With an annual rainfall below most states, rain is very welcome to ranchers, stockmen, and beekeepers.

We have had some short cold spells but mostly clear warm days. We all hope for rains to continue for a good spring build up and honey flow, to make up for a short crop for many last season.

**Miscellaneous:** This report was held up a couple of days so the writer could attend the annual beekeeper's meeting held Jan. 5 in Phoenix, Ariz.

Considerable apprehension was expressed by several producers in regard to the future of beekeeping in the Salt River Valley if the use of arsenic poison is continued in the dusting of crops. A partial survey was conducted, and it was estimated that approximately 15,000 colonies in this state were killed the past year. It is very discouraging to producers to face this poisoning of colonies year after year.

Mr. S. E. MacGreggor of the U. S. Bureau of Entomology, from Tucson, spoke regarding the use of various poison sprays. In general, his belief is that our only hope lies in getting sprays that are less harmful to bees.

While the wasteful practice of killing off thousands of colonies by dusting each year continues, the U. S. Department of Agriculture bulletin, dated Dec. 17, "recommended" that the number of colonies over the country be increased 8 per cent. They recommend an 8 per cent

increase while it is becoming more and more difficult to find locations that can be depended upon to produce a crop from year to year. No guarantee in any way is given as to the cost of production, or decent standard of living wages to the producers who do try to maintain commercial production. The writer did not take a pound of honey from 1,135 colonies through 1945. This is mentioned to show the uncertainties a producer has to face. With wholesale poisoning of thousands of colonies, it is no wonder that many look with apprehension toward future beekeeping in Arizona. — Leslie Wedgworth, Oracle, Arizona.

## WYOMING, JAN. 8

**Weather:** The normal annual rainfall for this State is about 11 inches, and while 1945 precipitation was considerably above this, it was so poorly distributed throughout our short growing season that the year was much below par. A long cold rainy season was followed by weeks of hot dry wind which cut the honey flow off early in July. Subsequent rains which helped pastures for livestock came too late to revive the honey flow.

**Condition of Bees:** From different parts of the State comes the word that bees went into winter much lighter than usual, for in anything approaching a normal season we have a somewhat tapering flow that enables the bees to fill up the brood chamber, but not so last fall, and much feeding will have to be done to avoid heavy losses. Skunks are becoming troublesome; many bee yards are raided by these pests, and a large number of the marauders are being trapped by beekeepers. We have with us our usual amount of or perhaps more bee disease. Inspection service is very short owing to lack of both funds and manpower. Some localities have had a tough fight with this greatest of all enemies to our industry.

**Market:** This is no longer a problem. There is possibly enough honey in the hands of producers to supply local demands but stocks for shipment to packers is entirely exhausted. Surely this is a real help, when we think of former years when the lion's share of the crop would be on hand and no buyers even at a nickle a pound. Thanks for this is due to our good American Honey Institute and our energetic marketing co-operatives.

**Miscellaneous:** Bee pasture is evidently becoming a problem with many of the big boys judging from the influx of migratory beekeepers coming into the State. During my 25 years of beekeeping in Wyoming I don't believe we've ever been short of bees. On the contrary, bees have had to be moved out following the same will o' the wisp.

The soil here has not reached the point of depletion that so far has made the farmers feel the need of using sweet clover to restore the nitrogen, and what a fight they do put up against it. Some years ago I scattered 500 pounds of seed purchased from a North Dakota seedsman. It came on fine, but that summer turned dry and there was a shortage of hay, so farmers cut the hay on highway right-of-ways and I lost my intended bee pasture. Sooner or later we may see some interest in sweet clover as has happened in some other States but until something of the kind occurs we are going to be squeezed for profitable bee pasture.—Earl C. Reed, Ranchester, Wyo.

## IOWA, Jan. 10

**Honey Crop:** Beekeepers of Iowa, along with the beekeepers of many other states, enjoyed a very fine crop for the season of 1945. This is the first crop in four years, being preceded by three crops of very indifferent supply. Many beekeepers were overwhelmed with the amount of honey as it came in from the fields.

The fall flow found beekeepers much confused by the two programs of work, one of gathering a crop of honey and the other of preparing colonies for winter. Needless to say, the first program took priority and the second program was conducted late and in an indifferent manner. It is for this reason that there may be some disappointment when operations begin in 1946. Colonies were not put away in as good condition as usual. The attention was

given to them when it was so late in the fall that it was difficult to determine the exact brood nest condition and, also, the exact amount of stores. Weather conditions have not been unduly severe to date and unless exceptional conditions exist between now and the opening of spring there should not be any undue winter loss in spite of the possible indifferent preparation for winter.

**Miscellaneous:** The inspection program in 1945 was expanded over that of any previous year. A total of 36 counties were cooperating with the State Inspection Service on an area clean-up program. Te total amount of funds appropriated by the counties has now exceeded that of the state appropriation. This indicates a very healthy spirit of cooperation on the part of county units. A total of 27,033 colonies were inspected. Of this number 1,452 were found diseased, of which 1,448 were destroyed either by the owner or by the inspector. This further indicates the spirt of cooperation on the part of local beekeepers in their desire to eradicate foulbrood when it is found.

This program of inspection is supported by educational effort, which will be materially expanded during the season of 1946. It is expected that a demonstration apiary will be established in each of the cooperating counties with at least three meetings held in each county during the season.

The Department of Agriculture has suggested 1946 production goals for bees for Iowa. This calls for an 18% increase in the units operated in '46 over those operated in '45 and a 48% increase in the number of units operated over the base period of 1940-'44. A comprehensive program of education is developed to carry this program to the fields where every help possible will be given to the beekeepers so that they may meet this demand for increased number of units. This setting of goals is in line with the educational effort of the Iowa Extension Service for the past 8 years. This program has emphasized the value of bees as pollinators in a state where the demand for legume seeds was far in excess of production.

Iowa beekeepers were encouraged by the production returns in 1945. Their plans already made call for a slight increase in units operated in '46 over those operated in '45. The labor situation which was so acute in 1945 is expected to be relieved some this year. Labor was undoubtedly the real bottleneck for operations last year.—F. B. Paddock, Ames, Ia.

## VIRGINIA, Jan. 14

**Weather:** The weather in Virginia in 1945 was very unusual. A very warm early spring, followed by a severe frost after everything had budded out, put a crimp in beekeeping in most parts of the state. Many bees starved or dwindled so they never built up again unless they were fed. This fall and winter has been cold and wet. We had two snows before Christmas. Bees have been able to take several flights, however, and seem to be wintering fairly well. This applies only to those colonies that had young queens and were fed early in the fall. At this writing we are having rainy foggy weather. It looks like there will be an abundance of moisture in the soil next season. Many colonies will starve this wintor because the Ration Boards failed to understand that bees should be fed the full amount in the fall and not by driblets through the winter.

**Honey Crop:** Virginia had the smallest crop of honey in 25 years. Only the northern part of the state had a fair crop. All of the honey is now out of the hands of the beekeepers.

**Bee Inspection:** The inspection program for 1945 has now been completed, with eight of the 10 five year counties inspected. The cooperation of the beekeepers has been excellent. More money will be available in 1946, and we expect to clean up the other two counties.

**Miscellaneous:** The short crop of honey and bad weather in 1945 has not lessened the beekeepers' interest in beekeeping. They have already begun planning for the good crop in 1946. I hope their hopes come true. The Virginia State Beekeepers Association expect to hold their winter meeting in Lynchburg early in March. Notices will be sent to all members, but all beekeepers are invited.—H. W. Weatherford, Vernon Hill, Virginia.

**NORTHERN ALABAMA, Jan 7**

**Weather:** We are having much rain at this time which has certainly watered honey plants for the coming spring. The temperature ranges between 70 and 80 degrees which together with the humidity is causing buds to swell.

This contrasts greatly with our December weather with its temperatures as low as 17 and 18 degrees above, and its snow flurries which reached the southern part of the state.

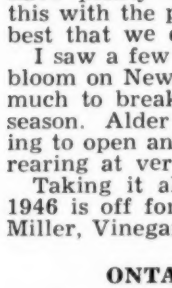
**Colony Conditions:** Colonies are in good shape at this time where enough stores have been left from last season. The consumption of stores has been light because of the cool fall and early winter. Cleansing flights have been few but with a good grade of stores on hand this is immaterial in our climate.

**Honey Flora:** As we depend upon perennial plants for our main honey flow their condition at this time is somewhat of a forecast of the crop for the coming season. These conditions are quite favorable. Plants have plenty of ripened wood and this with the proper moisture, is the best that we could ask.

I saw a few witch hazel bushes in bloom on New Year's day which did much to break the drabness of this season. Alder blooms are commencing to open and this will start brood rearing at very near its usual date.

Taking it all in all I would say 1946 is off for a good start.—H. G. Miller, Vinegar Bend, Ala.

**ONTARIO, Jan. 11**



**Weather:** What a contrast in weather conditions compared with those of a year ago, in this part of Ontario. Yesterday, while driving to Toronto and back again, roads were dry and dusty and no snow in sight at any place. A year ago, very heavy falls of snow came in mid-December and in mid-January we had at least two feet of the beautiful. A year ago with all this snow, there was no frost in the ground, and with clover well protected till mid-March we beekeepers were looking forward to a bumper crop of honey. Clover wintered perfectly, and yet most localities had a near failure of the honey crop. In contrast just now, there is no snow to cover the clover and heavy freezing in December has allowed the frost to penetrate quite deeply and prospects look none too good for a honey crop this year, judging by the way we usually make predictions. But with the signs of a good crop present a year ago, but which failed to materialize, may we hope that the signs may again be wrong, and that we may get a bumper crop in 1946! As already intimated, December was perhaps colder than usual with several days showing zero or lower, but since the New Year we have had quite mild weather with the peak of 58 degrees being reached on Jan. 6th, when bees had a general flight. On the 7th and 8th we noted in a few apiaries that nearly all colonies had cleared out their dead bees and there was little to suggest that the bees had needed a cleansing flight. A mid-winter flight practically eliminates all danger of the bees being confined too long.

**Miscellaneous:** Sorry that we made a mistake in last Gleanings relative to changes in rationing as it applies to sugar, preserves, syrups, etc. Only one coupon is used in rationing these various foods from now on. Formerly a sugar coupon was good for one pound of sugar at stated intervals. A preserve coupon was used to purchase honey, syrups, etc., or the purchase of one half pound of sugar—said coupon allowing purchase of two pounds of honey. The one and only coupon now in use still calls for one pound of sugar or four pounds of honey, so there is really no change at all in value as it is applicable to the purchase of honey. Honey is extremely scarce and a recent check up of stores shows that many have none at all to offer, and where honey is obtainable, it is all in very small packages.

With the new set-up regarding ration values, a purchaser would have to buy four pounds, or eight half-pound packages of honey, to get full value for his coupon. This is not likely to work out very well under the present supply of honey, but let us hope that next year's crop will be more bountiful and that larger sized packages will then be available.—J. L. Byer, Markham, Ont.

# Just News

**The Alleghany County Beekeeppers' Association** will meet Wednesday evening, February 20, at 7:30 p. m. in the Northside Y. M. C. A. Guest speaker will be P. G. Craddock of Pennsylvania State College.

According to University Farm News Bureau at St. Paul, Minnesota, dated January 3, 1946, Prof. M. H. Haydak is offering a correspondence course in beekeeping to both veterans and beginners. Detailed information may be obtained by writing Correspondence Study Department, General Extension Division, University of Minnesota, Minneapolis 14, Minnesota.

**The Nebraska Honey Producers' Association** will hold its annual meeting Tuesday, February 5, in the Plant Industry Building, College of Agriculture, Lincoln, Nebraska. Out-of-state speakers are Jere Frazier of Sioux City, Iowa, M. H. Haydak, St. Paul, Minn., and F. L. Swanson, Council Bluffs, Iowa. A splendid program is in store for all who attend.

**The Cook Dupage Beekeepers' Association** will hold its annual meeting and banquet with turkey dinner, Saturday, February 16, 1946, at the Stevens Building Restaurant, 17 North State Street, Eighth Floor, Chicago, Ill. Good speakers and the latest in bee pictures. Everyone welcome. Door opens at 3 p. m. dinner at 6 p. m., $2.00 a plate. Come and bring your friends.—A. J. Smith.

On February 20th-22, 1946, the Southeastern New England Farm and Home Show and Rhode Island Agricultural Conference will be held at Cranston Street Armory, Providence, Rhode Island.

**The tenth annual meeting of the Greater Vancouver Division of the British Columbia Honey Producers' Association** elected a pioneer farmer and beekeeper in the Fraser Valley, Murdo McLean, president. Harcourt Green, former secretary was made vice-president. Gordon W. Harvey, who had done so much to develop the Association during the past year as president, was elected secretary by acclamation. George Payne was re-elected as assistant secretary. The President gave an interesting report on the year's work and made many excellent suggestions for the coming year.

**The New Rochelle Beekeepers' Association** will hold its regular monthly meeting at the home of Miss Bernadette Miller, 122 Fifth Avenue, New Rochelle, N. Y., on Sunday, February 17, at 2:30 p. m. An instructive lecture will be given by John F. Keller, a former past president. He will use a rare zoology chart in natural color to illustrate, in which the complete cycle of the honeybee is shown. Movies will also be shown following the chart lecture. A. M. Barnes, Assistant Secretary.

**The Ohio State Beekeepers' Association** will hold its winter meeting on February 5, 6, and 7 at Ohio State University, Columbus, Ohio.

**Kansas State College Home Week, Beekeepers' Program,** February 7, 1946, Room 106, Dickens Hall, Manhattan, Kansas:

R. L. Parker, Professor of Apiculture and State Apiarist.

9:00 a. m., Apiary Inspection Service in 1945—R. L. Parker.

9:10 a. m., Commercial Management of Apiaries for Extracted Honey Production —J. G. Jessup, Commercial Beekeeper, Perry, Iowa.

9:50 a. m., The Possibilities for Beekeepers with Stabilized Agriculture—F. B. Paddock, State Apiarist of Iowa, Ames, Iowa.

10:30 a. m., Honey Crop Production and Prices after Sugar Rationing—J. G. Jessup.

(Kansas State Horticultural Society meeting) Room 108, Dickens Hall.

11:15 a. m., Fruit Tree Pollination by Honeybees—F. B. Paddock.

11:45 a.m., Pollinator of Tree Fruits, Kinds and Varieties—R. J. Barnett, Prof. of Horticulture.

12:15 p. m., Luncheon, Thompson Hall ((College Cafeteria.)

Roger C. Smith, Head of Department of Entomology, presiding.

1:30 p. m., Extracting Honey and the Steps from Combs to Wholesale and Retail Packages—J. G. Jessup.

2 p.m., Locating Nectar Areas through Aerial Survey.—R. L. Parker.

2:00 p. m., Bee Characteristics in American Foulbrood Resistant Strains—F. B. Paddock.

3:00 p m., Selection of Queen Bees and Requeening—R. L. Parker.

3:30 p. m., Visit to the Kansas Agricultural Experiment Station Apiary.

6:30 p. m., Annual Banquet, Kansas State Horticultural Society, Thompson Hall.

Democracy is Dangerous. F. D. Farrell, President Emeritus, Kansas State College.

# Talks to Beekeepers

By M. J. Deyell

**"We've Got to Have More Bees"**

The above is the title of an article appearing in the January, 1946, issue of the Farm Journal which has well over a million subscribers.

The article contains some startling statements, as, for example, "A generation ago an acre of good clover would yield 12 bushels of seed. Today the average is less than 1 bushel. Utah, one of our big alfalfa producing states, which twenty years ago marketed 24 milion bushels of seed, produced less than 4 milion bushels this year, although the seed acreage was about the same. It's like that nearly everywhere."

The article goes on to say that in Ohio 25 per cent of the land is planted to crops needing pollination. In the old days practically every farmer had a hive of bees. At present farming has become more intensive and the farmer has less time to work wild bees. Wild bees were at one time quite numerous. At the present time as the result of cutting timber and cleaning out the fence rows the wild bee population has been greatly reduced .

When government men connected with agriculture begin to get alarmed about the present situation, we know that it is becoming serious.

I hope most of you have read bulletin E-584 entitled, "The Dependence of Agriculture on Beekeeping Industry," prepared by the Division of Bee Culture, U. S. Department of Agriculture, Bureau of Entomology and Plant Quarantine, Beltsville, Md.

Since the appearance of this bulletin in 1942 there have been quite a number of articles in magazines and newspapers regarding the value of bees to agriculture. Honeybees are also mentioned quite frequently on the radio.

**Farmers and Fruit Men Now Asking for Bees**

About 20 years ago it was rather difficult to secure suitable apiary locations. During the spring of 1923, we had a carload of bees, about 325 colonies, shipped from Alabama to Medina, Ohio. It was my job, about three days before the car of bees arrived, to find suitable locations in the county. I thought I could get the job done in a day, but it took me almost three days. I approached the farmer on whose property I thought the bees would do well, as diplomatically as possible. When I mentioned bees he would usually throw up his hands in holy horror. I learned a few things about salesmanship. When I got the attention of the prospect, instead of mentioning bees, I would talk about fruits and clovers and the importance of honeybees for pollinating the blossoms. He would usually become interested, and at that point I would mention the possibility of putting some bees on his farm.

During the past few years, I have had farmers and fruit growers approach me, imploring me to put some bees on their farms. I believe articles on the importance of bees appearing in the press and in magazines recently have been largely responsible for this change of heart on the part of farmers.

I may have mentioned this before, but it will bear repeating: According to the best statistics available, there is only one hive of bees for each 90 acres, approximately, here in Ohio. That does not take into account bees found in trees and sidings of buildings. Perhaps no one will ever know just how many swarms there are, wild swarms, so-called.

Ohio has a heavier bee population than most other states. California heads the list in colonies of bees but California is a large state.

**A Word to Those Having Bees**

The following may be "old stuff" to experienced beekeepers but there are thousands of beginners among our readers who need this information. We receive many letters from over the country, especially from beginners who are worried about hives of bees that are covered with snow. As a matter of fact, there is no cause for worry. Snow is a marvelous protection for colonies during the winter. There is enough warmth from the cluster of bees to melt the snow away from the entrance so that enough air will filter through to supply the bees with oxygen. Occasionally, but not often, a bottom entrance may become frozen over with ice or sleet. Usually, how-

ever, the bees will generate enough heat to melt this ice. We do like to have an upper entrance, or flight hole, about ¾ of an inch in diameter bored just below the hand hold of each upper brood chamber, or food chamber, as an insurance against the colony becoming suffocated, also to permit the bees to get out of the hive easily during a good flight day.

**Bees Under Two Feet of Snow**

During the seasons of 1917 and 1918 I had between two three hundred colonies in the raspberry region of northern Michigan in Manistee County. As the first winter approached, I wondered how I would carry the bees through the winter and finally decided on a cellar underneath a good sized dwelling house which had to be fixed up by shoveling dirt around the upper part of the cellar and packing sawdust between the joists in the ceiling of the cellar.

I came down here to Medina in October of 1917, intending to return to Michigan during November to put the bees in the cellar. It so happened that our first child was born on November 21 (quite an important event in most families) which prevented my getting up North to put the bees away, until early December. When I got there I found between two and three feet of snow everywhere. Well, when I visited the apiary I saw what appeared to be small mounds here and there. The bees were snug as a bug in a rug. If I had known as much then as I think I know now I would have left the bees where they were. I thought they had to go into the cellar so I secured the services of a farmer with a big set of logging bobsleds to haul the bees from the apiary to the cellar. It was necessary, of course, to dig the bees out of the snow with a shovel. This moving, even though the weather was rather cold, disturbed the bees and did not improve their condition.

I wish now that I had left about a dozen hives of bees out of doors that winter in single-walled hives to find out how they would have wintered.

**Getting Ready for the Next Season**

Success in any line of endeavor depends largely on planning ahead intelligently. During the winter one can repair hives and supers, nail up frames and such work, provided there is a room available that can be heated. He has more time in the winter for such work.

It used to be thought that queens did not lay much during the winter months. It seems, however, in this area, queens in colonies wintered out of doors usually begin laying some eggs the latter part of January. A few years ago I made a trip to our western Ohio apiaries and looked into two normal colonies in double story hives. It was February 14 and the weather was quite cold. The colonies were clustered tightly, covering 7 or 8 combs each. Each colony had brood in three combs and a few young emerging bees. The patches of brood were not large, about the size of my hand, which is not too small.

What a wonderful balance runs through all nature. These young emerging bees seen in those hives, February 14, were apparently intended to take the place of the oldest bees in the hive that were perhaps born early during the preceding fall and would soon die, as they reached the end of their usefulness. As the young bees emerged from the cells, the queen would lay eggs in the empty cells and thus another cycle of brood would start. In powerful colonies there is likely to be an ample number of young bees on hand in the spring at the proper time, provided of course the colonies are well supplied with honey and pollen.

**A Word to Those Who Plan to Start Beekeeping this Year**

There will be thousands of beginners in beekeeping this coming season. There are at least four things these beginners should be told:

(1) Read good bee books and journals. Take more than one journal if possible. One bee journal, no matter how good it may be, may not contain all the necessary information on beekeeping.

(2) Attend bee meetings—county, state, and national. Mingle with beekeepers. Do not be afraid to ask questions regardless of how simple these questions may sound. Most experienced beekeepers are willing to help and share their knowledge.

(3) Take time off to visit experienced beekeepers. Possibly they would appreciate a little help in nailing up supers, or what not, as most of these people are very busy.

(4) Send to some reputable bee supply house for a catalog, and all of the free printed matter available. Study this faithfully.

# Buy and Sell Here

## CLASSIFIED ADS

**Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 10 cts. per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding.**

### HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibilty, and advise all beekeepers to sell for cash only or on C. O. D. terms except where the buyer has thoroughly established his credit with the seller.

WE PAY CASH for extracted clover honey. Fairfield Honey Company, Millersport, Ohio.

WANTED—All types clover and fall honey, 1945 crop. Cloverdale Apiaries, Fredonia, N. Y.

WANTED—White and amber honey, any amount. D. F. Treap, 317 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED—EXTRACTED HONEY—Clover or light amber. C. H. Denny, 483 Moody St., Akron 5, Ohio.

HONEY & BEESWAX—Highest prices paid. Mail samples. Advise quantity. BRYANT & COOKINHAM, LOS ANGELES, CALIF.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Kentucky.

CASH FOR YOUR HONEY—Extracted or comb. Regular trade, send sample. 60-lb. cans furnished, if desired. W. R. Moomaw, Stone Creek, Ohio.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th St., Detroit, Mich.

HONEY WANTED—All grades. Carloads or less. Also Beeswax. Pay Top Prices. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York 7, N. Y.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles, Calif.

CLOVER HONEY WANTED—Large or small lots. Would like to establish permanent connections with several good producers. Ellsworth A. Meineke, Rt. 1, Arlington Heights, Ills.

HONEY WANTED—Have buyers for all grades and varieties packed in 60-lb. tins or barrels. Mail samples and state quantity. FOREIGN COMMODITIES CORPORATION, 100 Hudson St., New York City.

WANTED—At highest ceiling prices—1,000,000 lbs. of amber honey; 1,000,000 lbs. of light; 10,000 cases 24-16 at $5.04. Cash paid, no amount too small. We pay the freight. Honeymoon Products Co., 39 E. Henry St., River Rouge 18, Mich.

ALL GRADES OF HONEY needed badly. Our truck will pick up at your door and pay top cash prices. ALEXANDER CO., 319 Reynolds, Toledo, Ohio.

### HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Mich.

### FOR SALE

FOR SALE—300 supers, 9 combs each, guaranteed clean. Write Andrews and Darst, Corona, Calif.

QUEENBEE PAINTING outfits, $1.00; colony records, 10-15c postpaid. Southwick Apiaries, Waban, Massachusetts.

ANDERPOLL fed in February is equal to a flow of nectar and pollen in March. Bruce Anderson, Cedar Grove, No. Car.

BEEKEEPER'S HOIST —25.00, f.o.b.— Frt. prepaid in U.S.A. on two hoists to same address. Turner Mfg. Co., Corning, Iowa.

FOR SALE—Disease free equipment for 250 hives of bees, including 45-frame extractor, etc. Write Orville Wegley, Williston, N. Dakota.

SCIENTIFIC precision built Queen Mating Boxes (nuclei), full thickness cypress, cost less than queen bee. Spoerri Apiaries, St. Bernard, Louisiana.

INSTANT SEVEN AND NINE FRAME SPACERS. Fast — accurate — indispensable. Fat combs — easy uncapping. Set does all supers, $1.50 postpaid. SPECIFY SIZE. George Leys, 48 Drake Ave., New Rochelle, New York.

SAVE MONEY by letting us work your wax into wired regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices as we have no agents. Walter T. Kelley Co., Paducah, Kentucky.

WRITE FOR CATALOG. Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

YOUR WAX WORKED into high quality medium brood foundation for 16c pound; 100 pounds, $12.00; medium brood foundation for sale at 70c per pound. Fred Petersen, Alden, Iowa.

FOR SALE—Complete 1200 colony outfit, ten-frame dovetail equipment, warehouse, home, truck, and equipment. Certificate of inspection furnished. Located at Salmon, Idaho. Earl Miller, Blackfoot, Ida.

VOLUME I (1873) to Volume 52 (1924) of Gleanings in Bee Culture for sale. Only 3 numbers missing. Will consider offers for entire lot or will break up set to supply urgent needs of libraries. (Also have extra early volumes and numbers.) Send list of your needs with offer. V. G. Milum, 104 Vivarium, Champaign, Illinois.

DRY SKIM MILK, 35 cents a pound; 5 lbs., $1.25; Brewer's yeast, 40 cents a pound; 5 lbs., $1.50; soy flour expeller, 10 lbs., $1.40. Write for prices in larger units. All prices F.O.B. M. Y. S. Company, Bainbridge, N. Y.

THE A. I. ROOT CO BEE SUPPLIES for sale. Also wanted to buy white extracted honey of good heavy body at ceiling prices in 60-lb cans. Please send sample. Benson Bee Line Co., James D. Benson, Prop., Galena, Ill., School Section R. No. 1.

FOR SALE—200 Root metal top, telescope cover hives painted with 10 drawn wired combs. 600 Root 10-frame full-depth supers painted with 8 drawn wired combs in each. 60-½ depth supers no comb. Make me an offer for all or part. E R M Radio, Maddock, N. D.

## BEES AND QUEENS FOR SALE

GLEANINGS cannot guarantee that all bees advertised for sale in our classified columns are free from disease. We use all possible care in accepting advertisements but we cannot be held responsible in case disease appears among bees sold. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

GOOD ITALIAN QUEENS, $1.00 each. D. W. HOWELL, SHELLMAN, GEORGIA.

PACKAGE BEES, QUEENS — Italians, circular free. Crenshaw County Apiaries, Rutledge, Alabama.

CAUCASIAN PACKAGE BEES for April and May. 2-lb. pkg. $4.00; 3-lb. pkg. $5.00. Prompt shipment. Lewis & Tillery Bee Co., Greenville, Ala.

FOR SALE—Package bees with select young Italian queens; 2-lbs., $4.00 each; 3 lbs. $5.00 each, orders of 50 or more. Thos. C. Burleson, Colusa, Calif.

PACKAGE BEES with young laying Caucasian queen; 2-lb. package with queen, $3.80; 3-lb. package with queen, $4.80. Miller & Evans, Three Rivers, Texas, Rt. 1.

Several hundred ten-frame two-story hives of Italian Bees for sale, very reasonable. Certificate of inspection furnished. Al Winn, Rt. 1, Box 729A, Petaluma, Cal.

2000 3-lb. packages of Italian bees and queens for delivery between March 25th and May 1st. Price: 3 lbs. and queen, $5.00. J. E. Wing & Son, Knights Landing, Calif.

Italian Queens selected for Winter Hardiness, production, non-swarming, and bred for resistance to A.F.B. Ready June 15, $1.25. R. E. Newell & Son, Holliston, Mass. Air Mail extra.

BREWER'S LINE-BRED CAUCASIAN QUEENS—Breeding stock selected from 1000 field tested colonies for honey-production and gentleness. All queens are mated in 5-frame nucs containing 5 standard brood frames. We furnish inspection certificate with every order, and guarantee live delivery. Now booking orders for April and May delivery, at $1.25 each. Terms—25% with order, balance, 10 days before queens are mailed. Brewer Brothers Apiaries. 3217 Hawthorne Road, Tampa 6, Florida.


**HONEY WANTED**
Carloads and less than carloads. Mail sample and best prices in all grades.
**C. W. AEPPLER COMPANY**
Oconomowoc, Wisconsin

**WANTED.-Extracted Honey All Kinds**
One can or a carload—what have you? Mail your offerings and samples to us. Prompt action—Cash on delivery.
**JEWETT & SHERMAN COMPANY**
Lisbon Rd. & Evins Ave., Cleveland 4, O.
1204 W. 12th St., Kansas City 7, Mo.

**MICHIGAN CLOVER HONEY WANTED!**
Buyer of MICHIGAN'S fine Clover Honey
Michigan producers write me when you have some of this fine Michigan Clover honey ready for market.
Can use your entire crop. Don't forget, and write.
**TOWNSEND SALES COMPANY**
E. D. TOWNSEND
NORTHSTAR, MICHIGAN

**Soy Flour & Pollen Traps**
We are distributors of Staley's Lo-Fat, High Protein expeller processed soy flour for beekeepers. We offer the finest quality in our soy flour and pollen traps.
**KILLION & SONS APIARIES**
Paris, Illinois

**1 Garden Seeds FREE**
To the first 1000 who order through this notice, we'll send FREE $1.00 in garden seeds Write for our "Lucky 7". Offer and Catalog today
BERRY SEED CO., Box282F Clarinda, Iowa

**Gentle Northern Queens**
FROM PROLIFIC 3-BANDED ITALIAN BREEDING STOCK
All queens reared under natural conditions in large over-wintered queen-right colonies under supersedure impulse, this being nature's way of producing large, yellow queens that are fully developed.
Some of this stock was recently shipped by air to China, and were successfully introduced.
All shipments will go by air mail starting June 1st, $1.10 each. Please let me book a trial order for 1946, and show you some young northern queens of quality, prompt service, satisfaction.
**Barger Apiaries**
CAREY, OHIO

**Booking Orders for 1946 for Our Bright Three-banded Italian Queens and Package Bees.**

| PRICES: | Queens | Packages and Queens 2 lbs. | 3 lbs | 4 lbs. | 5 lbs |
|---|---|---|---|---|---|
| 1 - 4 | $1.25 | $4.00 | $5.10 | $6.20 | $7.30 |
| 25 - 99 | 1.15 | 3.75 | 4.80 | 5.85 | 6.90 |
| 100 - up | 1.05 | 3.50 | 4.50 | 5.50 | 6.50 |

We ask 10% deposit with orders booked in advance. We guarantee safe arrival and satisfaction.

**TAYLOR APIARIES**
**Box 249, Luverne, Alabama**

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**YOUNG ITALIAN BEES AND A YOUNG QUEEN**

**Make an excellent package**

We still have a few good shipping dates open.

**Write for prices and dates available.**

**RAPIDES APIARIES**
**WINNFIELD, LA.**

---

## Italian Bees and Queens!

We are booking orders for Spring, 1946 Only 20% with order, balance ten (10) days before shipping date. Prices as follows:

**2-lb. package with queen ..... $3.50**
**3-lb. package with queen ..... 4.50**
**4-lb. package with queen ..... 5.50**

## The Star Bee Farm
**HESSMER, LA.**

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## Italian Bees and Queens!

2-lb. package with queen, $3.50
3-lb. package with queen, 4.50
4-lb. package with queen, 5.50

Health certificate, and safe arrival guaranteed, 20% deposit on booking orders.

**CLOVER BEE FARMS**
**Hessmer, La.**

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**OLDEST BEE JOURNAL IN THE ENGLISH LANGUAGE**

Keep up on markets, practices, scientific data, reguations, plant possibilities.

1 year—$1.50; 3 fears—$3.00. U. S. and Canada. Foreign postage 25c a year additional.

**AMERICAN BEE JOURNAL**
**Hamilton, Illinois**

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## The Beekeepers' Magazine

**Send postal card today for free copy and special introductory offer!**

Spicy - Up-to-date - Practical

**Rt. 5, Box 181 Lansing, Mich.**

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23 Standard 10-frame hives of Italian bees. Guaranteed no disease. $10.00 each. W R. Athey, Kyger, Ohio.

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THREE-BANDED ITALIAN bees and queens, 2 lbs. and queen, $4.00; 3 lbs. and queen, $5.00. Select queens, 1 to 25, $1.25; 25 to 50, $1.15; 50 up, $1.05. Alamance Bee Company, Geo. E. Curtis, Mgr., Graham, No. Car.

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THE NORMA ROY APIARIES — Italian bees. 2 lbs., with queen, $3.25; 3 lbs., with queen, $4.00. We will take orders for shipment after May 25th. Live delivery and a healthy certificate. Norma E. Roy & Son, Hessmer, Louisiana.

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## MISCELLANEOUS WANTED

WANTED—Colonies of bees in Michigan. Frank D. Chamberlain, Caro, Mich.

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WANTED—Clockwork metronome. John Talbot Winchell, Victorville, California.

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WANTED—To rent or buy an apiary in North Central states. Alfred Killion, Union City, Ind.

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WANTED—50-75 colonies of bees around April 15 to May 1. Fred Russell, Chelmsford, Mass.

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WANTED TO BUY—Need 8-frame equipment, supers, bodies, bottom boards, etc., new. Lose Bros., 206 E. Jefferson, Louisville 2, Kentucky.

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WANTED—Five pounds trapped pollen or less if five not available. George Burke, 847 Belmont, Chicago, Ills.

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WANTED TO BUY—Eight-frame factory-made beeway section supers. George Rehman, North Baltimore, Ohio.

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WANTED—500 colonies bees, standard equipment with supers. Location midwest. Box 1500 Gleanings, Medina, Ohio.

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SONG poems wanted for musical setting. Send poem for immediate consideration. Five Star Music Masters, 497 Beacon Bldg., Boston, 8, Mass.

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WANTED—For cash, clean colonies in southern Wisconsin; also wired foundation, radial extractor and extracting equipment. Stanley Benson, McFarland, Wisconsin.

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WANTED—Up to 500 colonies of bees with supplies and extracting equipment. Must be in a disease free and high production area. Box 635, Gleanings, Medina, Ohio.

---

FOR RENT—Bees on shares. Operating 5000 colonies western Iowa. Will furnish size unit to suit. All good 10-frame equipment. Good locations. Bees are to remain on present locations. You must know the bee business. OLD TAYLOR HONEY CO., Harlan, Iowa.

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## SUPPLIES

**ATTENTION BEEKEEPERS IN MINNESOTA, Wis., Iowa, N. D. and S. D.** Buy Lewis-Dadant Bee Supplies and Honey Containers in Minneapolis and save. Send for price lists. **TOP PRICES PAID FOR HONEY AND BEESWAX IN CASH OR TRADE. HONEY SALES COMPANY**, 1806-08 No. Washington Ave., Minneapolis 11, Minnesota.

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## SEEDS

SEEDS OF HONEY PLANTS: Anise Hyssop, wonder honey plant with long blooming period; one ounce, 40,000 seeds, $2.00; quarter pound, $5.00 postpaid. White Dutch clover, only $1.10 per pound postpaid. Ladino Clover, $2.50 per pound postpaid.

Write for circular describing forty varieties. One packet each of fifteen desirable honey plants, $2.00 postpaid. Pellett Gardens, Atlantic, Iowa.

BY EXPRESS COLLECT — Transplanted American Basswood trees 4-5 ft., $1.00; 5-6 ft., $1.75; 6-8 ft., $2.25; 8-10 ft., $3.00. Earlier blooming European Basswood trees 4-5 ft., $2.00; 3-4 ft., $1.50. French Pussy Willow (early pollen producers) 3-4 ft., 60c; 4-5 ft., 90c each. Red Barked Dogwood and Pink Tartarian Honeysuckle shrubs 12-18 inch, $8.50 per 50. Write for our NECTAR and POLLEN producing shrub and tree postpaid $1.20 collections, and circulars. NICOLLET COUNTY NURSERY, St. Peter, Minnesota.

FINE TESTED ALFALFA, $20.50 per bu.; Grimm, $23.00; Red Clover, $21.70; Scarified Sweet Clover, $8.25; New Timothy, $3.25; Timothy and Alsike Mixed, $6.00; New Strain Brome, $3.50; Korean Lespedeza, $2.60; Early Giant, $4.95; Hybrid Seed Corn, tested, $4.25. Our seeds releaned, tested. Guaranteed satisfactory and sold subject your 60-day test. Write now for Free Samples and 1946 catalog. Hurry, scarcities exist. American Field Seed Co., Dept. 382, Chicago 9, Illinois.

HIGH TESTING ALFALFA, $20.40; Grimm, $23.40; Red Clover, $21.60; Alsike, $21.60; Sweet Clover, Scarified, $8.40; Unhulled, $4.20; New Timothy, $3.20; Alsike and Timothy, $5.95; New Strain Brome, $3.50; Korean Lespedeza, $2.50; Early Giant, $4.90; high quality. All per bushel, triple recleaned. Hybrid Corn, $4.25. Guaranteed satisfactory. Free samples - catalog. Frank Sinn, Box 482, Clarinda, Iowa.

## HELP WANTED

WANTED—Man to work bees coming season. Give age, weight, wages expected, and references. C. H. Schader, Sunnyside. Washington.

Young man with some experience to assist in extracted honey production, 1946, Season April to November, state age, habits, experience, and salary expected. Board, room furnished. Lavern Depew, Auburn, N. Y.

VETERAN, 34, married, desires position with progressive producer. Would consider GI Bill Rights investment with right set-up. William Sudds, 33 Kelvin St., Forest Hills, N. Y.

WANTED—Man to work in our apiaries. All replies will be answered. F. D. Lamkin, Union Springs, N. Y.

WANTED—One experienced beekeeper and one willing to work. Prefer married veterans. Modern house furnished. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

WANTED—Several helpers, preferably with some experience, from April 25th to Nov. 5th and several from June 15th to Sept. 1st. Our over 3000 colony outfit offers a good chance to learn. State age, experience, and wages wanted. We furnish board and room. Oscar H. Schmidt & Sons, Rt. 4, Bay City, Mich.

WANTED—Several experienced or inexperienced men to work in our apiaries. Good pay. Schultz Honey Farms, Ripon, Wisconsin.

APIARY INSPECTORS needed by the Michigan Department of Agriculture. Salary and expenses. Inquire Michigan Civil Service Commission, 300 North Grand Avenue, Lansing 4, Michigan.


**NOW BOOKING**
**1946 PACKAGES**

**2-lb. package with queen .....$3.75**
**3-lb. package with queen ..... 4.75**
**Queenless package ..... deduct $1.00**
**"Dixie's Best" (Italians)**
**TANNER BEE CO.**
**Laurel, Miss.**

**ITALIAN BEES-AND QUEENS FOR 1946!**

We still have a few good dates open. Order direct from this ad.
**2-lb. package with queen, $4.00**
**3-lb. package with queen, $5.00**
**Queens .....$1.25**
5% discount on 50 packages or more.
Our bees are gentle and good honey gatherers. 25% will book your order.
**WALKER APIARIES**
**Pharr, Texas, P. O. Box 894**

**Three-Banded Italian Bees And Queens for 1946!**

Write for prices and book your order early. Rush your order and avoid disappointment!
**J. P. CORONA**
**Box 124 Kenner, La.**

**GASPARD'S QUALITY ITALIAN QUEENS AND PACKAGE BEES!**

We are now booking orders for the Spring of 1946
Only 20% with order, balance at shipping time.
**PRICES AS FOLLOWS:**
**2-lb. package with queens, $3.50**
**3-lb. package with queens, 4.50**
**4-lb. package with queens, 5.50**
**5-lb. package with queens, 6.50**
**Comb packages with one frame of brood and honey, add $1.50 per package.**
**J. H. GASPARD**
**HESSMER, LOUISIANA**

**Italian Bees and Queens for 1946!**

**To get preferred shipping dates we wish to advise you to place your order now as our list is rapidly filling up.**

**LET US KNOW YOUR NEEDS FOR THE COMING SEASON AND WE WILL GIVE YOU OUR QUOTATIONS AND DATE.**

**B. J. Bordelon Apiaries**
**MOREAUVILLE, LA.**

## PACKAGE BEES

**Quality Italian Bees and Queens**
We still have some good shipping dates for the coming season.
**Prices F.O.B. Tifton**

| | 1-23 | 24-98 | 99 and over |
|---|---|---|---|
| 2-lb. pk. with queen | $3.85 | $3.70 | $3.50 |
| 3-lb. pk. with queen | 4.85 | 4.70 | 4.50 |

Queenless packages are less.
One dollar per package reserves the date, the remainder due at least 10 days prior to the shipping date.

**GIRARDEAU APIARIES**
(Successors to Morley Pettit)
TIFTON, GEORGIA

## Italian Bees and Queens!

2-lb. packages with queen, $3.50
3-lb. packages with queen, 4.50
4-lb. packages with queen, 5.50

Health certificate, and safe arrival guaranteed. 20% deposit on booking orders.

**N. Gauthier Bee Company**
HESSMER, LA.

## NOTICE!

**Three--banded Italian Queens and Bees**
To our customers and friends, I am now booking orders for spring delivery for Italian Queens and Bees.
Write or wire your orders before we are booked up.

| | 1-24 | 24-48 | 100 lots |
|---|---|---|---|
| 2-lb. ..... | $4.00 | $3.75 | $3.50 |
| 3-lb. ..... | 5.00 | 4.75 | 4.50 |

Italian queens, 1-.50, $1.25; 50-100, $1.10
Customer is the judge and must be satisfied.

**Huber Forehand**
SATSUMA, ALA.
42 Years Among the Bees

FACTORY TO YOU!
**KITSELMAN FENCE**
Buy Farm, Poultry, Hog Fence, Steel Posts, Barbed Wire at FACTORY PRICES! Save too on quality Paints, Roofing, Hay Tools, Hog Feeders, Founts, Poultry Supplies and other farm needs! **WE PAY FREIGHT.** Write today for FREE Catalog!
KITSELMAN BROTHERS
Dept. 21 Muncie, Indiana

**THE GOLDEN QUEENS OF THE GOLDEN WEST!**
Try our western-bred queens and bees, for they are the best. The war is over now and the Clifton Brothers are back together again to give more efficient service and better bees and queens than ever before.
We are booking orders for spring 1946.
**CLIFTON APIARIES**


WANTED—Experienced helpers for queen yards, package bee yards and general bee work. Only honest, reliable men considered, no boozers. Give full information, age, experience, reference and salary expected in first letter. YORK BEE COMPANY, JESUP, GEORGIA.

WANTED—Young man for my Minnesota apiaries. Give experience, age, and wages expected. E. E. Salge, Weslaco, Texas.

YOUNG MEN with some experience. Write stating age, wages, expected, etc. Soder Apiaries. Stratford. Iowa.

WANTED—A man to work with bees this coming season. Must be reliable. Give age and wages expected. Walter Rink, Port Hope, Michigan.

QUEEN BREEDER, also Package Man for Louisiana Unit. Write what you can do, and wages expected. Reliable, honest men wanted. Ephardt Honey Farms, Innis, Louisiana.

## MISCELLANEOUS

EARTHWORM CULTURE — Send postcard for valuable FREE bulletin, with review on "Intensive Propagation and Use of Earth-worms in Soil-buiding." Thos. J. Barrett, Earthmaster Farms, Box 488-G, Roscoe, Calif.

## MAGAZINES

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. yearly 7s, 6d., International Money Order. Apply Editor, Indian Bee Journal. Ramgarh, Dist. Nain Tal, U. P., India.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba Beekeepers' Association. One year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $2.25. Wallingford Building, Winnipeg, Canada.

Read the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, 14 Riebeck St., Worcester, C. P. South Africa.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription—$1.50. Hotel Cactus, San Angelo, Texas.

MANY BEEKEEPERS have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy. Canada's oldest fur farming magazine tells how. Fur Trade Journal of Canada, Box 31, Toronto 2, Ontario.

THE BEE WORLD—The leading Journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free. 12 cents stamps. Membership in the Club including a subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxston, Royston, Herts, England.

**Australian Beekeeping News**
**The Leading Bee Journal of the Southern Hemisphere is the "AUSTRALASIAN BEEKEEPER"**
Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office
Write now to the Editor, P. O. Box 20 West Maitland New South Wales Australia

## 1946 PACKAGE 1946 BEES AND QUEENS

**BRIGHT 3-BANDED ITALIAN**

—Again We offer you—

**Superior Quality - Quick Service**
**Young Baby Bees - Full Weight**
**In Light Shipping Cages and Choice Queens!**

**Prices of Package Bees With Queens**

| | 2-lb. | 3-lb. | Ex. Qns. |
|---|---|---|---|
| 1-24 | $4.00 | $5.00 | $1.25 |
| 25-99 | 3.75 | 4.75 | 1.10 |
| 100 up | 3.60 | 4.60 | 1.00 |

Package bees F.O.B. Express. Safe arrival, satisfaction g u a r an t e e d, state health certificate furnished.

**NORMAN BROS. APIARIES**
**RAMER, ALABAMA**

## ITALIAN BEES AND QUEENS

We appreciate your business in the past and trust that we shall have the pleasure of serving you this coming season.

| | Queens | 2-lbs. | 3-lbs. |
|---|---|---|---|
| 1-24 | $1.25 | $4.00 | $5.00 |
| 25-99 | 1.15 | 3.75 | 4.75 |
| 100-up | 1.00 | 3.50 | 4.50 |

Daughters of queens bred for resistance

THREE BANDED. Prompt service—Every package and queen guaranteed.

**Lucedale Apiaries**
**LUCEDALE, MISSISSIPPI**

## "HONEY GIRL" ITALIAN PACKAGE BEES

| Package | 1 to 4 | 5 or more |
|---|---|---|
| 2 lb. bees with queen | $4.25 ea. | $4.00 ea. |
| 3 lb. bees with queen | 5.25 ea. | 5.00 ea. |

**ST. ROMAIN'S "HONEY GIRL" APIARIES**

## PACKAGE BEES FOR 1946

**2-lb. package with queen, $3.50 each**
**3-lb. package with queen, 4.50 each**
**4-lb package with queen, 5.50 each**
**Queenless package, deduct 90c from above prices. 20% down books order. Health certificate and safe delivery guaranteed.**

**Address**
**HESSMER BEE FARM**
**HESSMER, LA.**

## DEXTER BROTHERS

### First Quality Italians

### Package Bees - Queens

**Package Bees with Queens**

| | 2-lb. | 3-lb. | Extra Queens |
|---|---|---|---|
| 1-24 | $4.00 | $5.00 | $1.25 |
| 25-99 | 3.75 | 4.75 | 1.15 |
| 100-up | 3.50 | 4.50 | 1.05 |

Terms: Small orders, cash in full. Large Orders 20% deposit, balance to be received in two weeks before shipping date.

**Dexter Brothers**
**Myrtle Beach, South Carolina**

## A Happy and Prosperous New Year To All!

**Again we are offering our reliable strain of Light Italian Bees and Queens which are easy to handle and very good honey gatherers!** We are looking forward to a season of heavier demand than our power of production so please book your need now and avoid disappointment later.

**10% now will reserve your shipping date usual freedom from diseases and live delivery guaranteed. All packages quoted with young select untested laying queen. No C.O.D. orders accepted.**

| | 2-lb. | 3-lb. |
|---|---|---|
| 1-24 | $4.00 | $4.80 |
| 25-49 | 3.75 | 4.60 |
| 50 on up | 3.50 | 4.40 |

**Plauche Bee Farm**
**HAMBURG, LOUISIANA**

## 3-Banded Queens—Italians!

**HIGHLY PRODUCTIVE STRAINS**

1-24, $1.25; 25-99, $1.15; 100-up, $1.05

Quality and Service Guaranteed !

**ALLEN APIARIES**
**610 Cherokee St., Mobile, Alabama**

## Tanquary Honey Farms, Inc.

## PACKAGE BEES

**QUALITY - QUANTITY - HEALTH SERVICE**

None but young worker bees with 1946 select laying queens. Prompt and efficient service. Health certificate on every package.

Get daughters from improved parentage, bred for disease resistance, tested under supervision and checked for performance.

**WRITE, WIRE OR CALL YOUR ORDERS IN!**

Price List for 1946

| | 1-24 | 25-49 | 50-99 | 100 up |
|---|---|---|---|---|
| 2-lb. pkg. & queen | $4.15 | $4.05 | $4.00 | $3.70 |
| 3-lb. pkg. & queen | 5.15 | 5.05 | 5.00 | 4.70 |
| 4-lb. pkg. & queen | 6.15 | 6.05 | 6.00 | 5.70 |
| Tested queens | 2.10 | 2.05 | 2.00 | 1.75 |
| Untested Queens | 1.35 | 1.30 | 1.25 | 1.15 |

Queenless pkgs., deduct $1.10 per package. Package bees f.o.b. Queens postpaid

## Tanquary Honey Farms, Inc.

LENA, SOUTH CAROLINA

## Red Stick Apiaries & Co.

## PACKAGE BEES — QUEENS

Twenty-five years as Commercial Queen Breeders.
Oldest Combless Package Bee Shippers in Louisiana.

**OPEN FOR 1946 BOOKING**
**ITALIAN STOCK - RESISTANT STOCK**
**YOUR CHOICE**

| Quantity | Queens | 2-Lb. | 3-Lb. |
|---|---|---|---|
| 1 to 24 | $1.25 | $4.00 | $5.00 |
| 25 to 99 | 1.15 | 3.75 | 4.80 |
| 100 or over | 1.05 | 3.50 | 4.50 |

**Contract Your Orders Early!**

Net with order for United States or Canada

## RED STICK APIARIES & CO.

Main Office, 125 Lessard St.
Donaldsonville, Louisiana
Telegraph, Western Union

## PACKAGE BEES

**Hardy leather colored Italians. Fast conscientious service.**

**2-lb. with queen, $4.00**

**3-lb. with queen, $5.00**

**25c per package extra for small orders.**

**BOOK NOW FOR '46!**

## EUGENE WALKER

397 Oregon St. Gridley, Calif.

## BEES AND QUEENS!

**ALL BREEDERS NORTHERN RECORD PRODUCERS!**

Our system of holding queens in large nuclei until egg ability is proven assures you of the finest queens to be had at any price.

**2-lb. pkg. with queen, $4.00**
**3-lb. pkg. with queen, 5.00**
**4-lb. pkg. with queen, 6.10**
**Extra queens ..... 1.25**

**10% discount on orders of 25 or more queens or packages with queens. For queenless packages deduct price of queen.**

## THE RICH HONEY FARMS

JEANERETTE, LA.

## PACKAGE BUYERS!

Again we offer the same high quality Italian queens and packages as in the past and expect to give the same "on time" service and careful attention to every order.

| | 1-24 | 25-99 | 100-up |
|---|---|---|---|
| 2-lb. pkg. with queen | $4.00 | $3.75 | $3.50 |
| 3-lb. pkg. with queen | 5.00 | 4.75 | 4.50 |
| Extra Queens ..... | 1.25 | 1.15 | 1.05 |

**For queenless packages deduct price of queen. Add $1.00 per pound for larger packages.**

## W. E. PLANT

HATTIESBURG, RT. 2, MISS.

## Flowers Improved Quality Three Band Italians!

That will stand the test for honey gatherers. We have the bees and will have plenty of labor to fill your orders for you this spring. So place your order now. Write for prices.

## Flowers Bee Company

JESUP, GEORGIA

This photo shows a portion of one of our queen yards containing over 6,000 nuclei


**1946 ITALIAN PACKAGE BEES - QUEENS 1946**

2-lb. with queen ..... $4.00
3-lb. with queen ..... 5.00
Extra queens, each ..... 1.25

**QUEENS**
**Light Italians**

**WE SOLICIT QUEEN TRADE FROM LARGE QUEEN USERS ALL OVER THE NATION!**

We were never out of queens in 1945, in spite of the unusually heavy demands. Place your order where you can rely on getting your queens when you want them. Write for our special prices on large orders as well as our folder which shows you what others think of the quality of our queens and packages, and dependable service.

**OVERBEY APIARIES, BUNKIE, LA.**
**Phone 657 day or night**


## INVESTIGATIONS ON MATERIALS SUGGESTED AS BEE REPELLENTS

(Continued from page 79)

that the use of some of the "repellent" materials would produce plant injury. This factor obviously could not be lightly dismissed.

In 1943, tests were conducted at Massachusetts State College to try to obtain data on this point: Through the cooperation of the Department of Pomology, a row of 10 Cortland trees was made available. These trees were sprayed slightly after full bloom. Half of each tree received a spray of the repellent, the rest of the tree acting as a check.

Records of injury were taken. These indicated that the various creosote mixtures in standard calyx solutions produced injury. Carbolic acid and Milkol solutions did not produce as serious results.

Records of the numbers of fruits produced on the two halves of each tree were taken. In general there were slightly less in most cases on the portion of the tree receiving the repellent. However, the results do not indicate that such differences would be of commercial importance. If the applications had been made earlier, it would seem likely that sufficient blossom damage would have occurred to result in a lowered crop of fruit.

**Conclusions:**

1. Creosote, carbolic acid and Milkol have been tested as possible bee "repellents." The addition of such materials does effect a reduction in length of life of the bees. Whether the reduction is due to starvation as a result of repellent action or to actual poisoning, remains undetermined.

2. Creosote mixtures have caused varying degrees of blossom injury to apple. The importance of this conceivably might vary with time of application.

3. Before the use of any repellent material should be suggested, tests to determine its effects, both on bees and plants, should be made.


**The John M. Davis Strain**
Bred the Davis Way
**Italian Queens!**

Guaranteed purely mated and to satisfy you in every way or your money refunded. You be the judge!

| | 1-24 | 25-up |
|---|---|---|
| Young Laying Queens | $1.25 | $1.15 |
| Young Tested Queens | 1.50 | 1.40 |

After June 30th Untested $1.00 each, any number.

**LITTLE'S APIARIES**
P. O. Box 122, Shelbyville, Tenn.

## THREE BAND ITALIAN PACKAGE BEES

Full weight, prompt shipment, young bees. State Health Certificate with each shipment. Live arrival guaranteed. Replacement or refund made promptly upon receipt of bad order from your express agent.

**Our Prices until June 10, 1946 in U. S. Funds**

| | Each Queens | With Queens 2-lb. | 3-lb. | 4-lb. | 5-lb. |
|---|---|---|---|---|---|
| 1-29 | $1.10 | $4.00 | $5.10 | $6.20 | $7.30 |
| 30 or more | | 3.50 | 4.50 | 5.50 | 6.50 |

**For Queenless Packages deduct $1.10 each from above prices, if queens are wanted introduced, add $1.10 to the price of each package.**

**JACKSON APIARIES**

**FUNSTON, GA. U. S. A.**

## LEST YOU FORGET . . .

the good rule to go by. Buy your bees and queens from

**ALABAMA APIARIES**
**Mt. Pleasant, P. O. URIAH, Ala.**

My son C. H. has been in the Atlantic and the Pacific for the last three years serving our Country. We gave the best service possible during that time. He is back on the job now, and will appreciate any orders that you may send our way. Prices same as last year. Our aim— once a customer always a customer.

## Three Band Italian Bees With Queens for 1946!

**Plenty Queens March 1st through season, $1.25 each.**

| | 1-24 | 24-48 | 48-up |
|---|---|---|---|
| 2-lb. package | $4.00 | $3.75 | $3.60 |
| 3-lb. package | 5.00 | 4.75 | 4.60 |

20% deposit books order balance ten days before shipping.

**E. R. RALEY**

**Box 1610, Daytona Beach, Fla.**

## Ray's Apiaries

**Lynn Williams**
**QUEENS AND PACKAGE BEES FOR SALE**
**Route 3, Box 152**
**OROVILLE, CALIFORNIA**

**WE ARE NOW BOOKING ORDERS FOR SPRING, 1946!**

Only 20% down, balance 10 days before shipment.

| | |
|---|---|
| 2-lb. package with queen | $3.50 |
| 3-lb. package with queen | 4.50 |
| 4-lb. package with queen | 5.50 |

**Dixie Bee Farm**

**Normand Bros., Prop.**
**HESSMER, LA.**

## Three Banded Italians

**PRICES FOR 1946**

| | |
|---|---|
| 2 lb. with queen | $3.65 |
| 3-lb. with queen | 4.65 |
| Queens | 1.00 |

**$1.00 deposit required on packages**

**A. M. Peach**

**BALDWYN, MISS.**

### TOO LATE TO CLASSIFY

FOR SALE—50 strong stands of bees, 200 extra supers, bottoms or covers; excluders, acid covers, foundation, electric knives, complete outfit small tools, Root extractor, gasoline engine, Fairbanks scales, evaporative cooler, quantity new cans, lumber, joists, flooring, plywood, good 1½-ton '39 Stake truck, new engine, overload springs and tires, with 14 foot platform. Certificate of inspection furnished. M. L. Snodgrass, 608 N. 10 Ave., Phoenix, Arizona.

FOR SALE—75 to 100 nuclei, state inpected. Delivery May or June. Young queens with each nuc. Harry I. Strickland, Clearwater, Florida.

WANTED—25 to 300 colonies to work on shares, in Northwestern Ohio. N. George Thompson, 5714 Phillips Ave., Sylvania, O.

GREEN'S profit-producing queens will please you as they have pleased hundreds of others. Famous the country over. Where could you do better? Price, $1.00 each. D. P. Green, Rt. 2, Deland, Florida.

## BEEKEEPERS ITEM

**Serving the beekeeping industry for a quarter century without bias or prejudice "The forum for the thoughtful." One year $1.00; two years, $1.50; sample copy, 3c stamp.**

**With Gleanings it provides a combination that covers the beekeeping field.**

**Both magazines for one year, $1.75**

**BEEKEEPERS ITEM**
**P. O. Box 687 San Antonio, Texas**

"A CALL FOR HELP"
Will you help us keep our customers happy?
We are appealing to our old and new friends alike:
"Bring in or ship us your Honey"
We need it—B-Z-B jars need it—and the busy housewife needs it.
You help us help them keep up their energy.

B-Z-B Honey Company

361 E. Valley Blvd., ALHAMBRA (Los Angeles County), CALIF.

Root QUALITY BEE SUPPLIES

BUY WITH CONFIDENCE

Root QUALITY BEE SUPPLIES

FOR MICHIGAN

FOR MICHIGAN

ROOT HIVES have the preferred style cuts and dimensions and are the standard the world over.

Our stock is Limited. Anticipate your 1946 needs and place your order early!

WRITE FOR CONTAINER PRICE LIST AND OUR LIST OF SPECIAL ITEMS

BEESWAX WANTED—Cash price, 41½c lb. Trade price, 43½c lb. Freight paid on 100 lbs. or more.

M. J. BECK COMPANY

Successor to M. H. Hunt and Son

510 N. CEDAR ST. Box 7 LANSING 1, MICH.

70 Years Ago

ANNIVERSARY OF COMB FOUNDATION

"February 26. We are happy to state that the metal rollers are a complete success and we can roll out one continuous sheet a foot wide and a mile long if we wish. The machine has cost much money. . . . . The impressions in the rolls were made by striking them one at a time with different shaped punches, yet they are made with such astonishing accuracy that we can make cells with bottoms nearly as thin as a soap bubble."

—From February issue of Gleanings in Bee Culture, 1876

THE A. I. ROOT COMPANY, Medina, Ohio
Leaders Then, Leaders Now

KELLEY—"The Bee Man"

# BEES

We offer 3-Banded Italian Bees for express shipment from our Louisiana bee farm. We have many open dates so rush in your orders. Shipments start April 1st.

| | 1 to 24 | 25 to 90 | 100 up |
|---|---|---|---|
| 2-lb. swarms with young queens | $3.75 | $3.60 | $3.50 |
| 3-lb. swarms with young queens | 4.75 | 4.60 | 4.50 |
| Young laying queens | $1.10 each | 25 and over | $1.00 |

## THE WALTER T. KELLEY CO.

Paducah, Kentucky

---

**LEATHER COLORED ITALIAN QUEENS**
**MIDDLE TENNESSEE APIARIES**
1 to 25, $1.25; 26 on up, $1.10—From Imported Strains.
¼ books orders. Balance before shipping. Add 5 cents for all queens by air.
(All Queens after June 15, $1.00)
**J. B. TATE & SON**
1029 No. 4th St., Nashville 7, Tenn. Tel. No. 34509M

---

## QUEENS! — ITALIANS! — PACKAGES!

The following prices will be effective until further notice for 1946.

| Quantity | Queens | 2-lb. pkgs. | 3-lb. pkgs. |
|---|---|---|---|
| 1-24 | $1.25 | $4.00 | $5.10 |
| 25-99 | 1.15 | 3.75 | 4.80 |
| 100-up | 1.05 | 3.50 | 4.50 |

## BESSONET BEE COMPANY

DONALDSONVILLE, LOUISIANA

---

## NO CHANGE IN PRICES FOR 1946

WE ARE BOOKED TO CAPACITY FOR ALL APRIL SHIPPING DATES. Can accept orders for May shipping only. First come—first served!
All orders for more than two packages SHOULD BE FOR MULTIPLES OF THREE, to make even crates. FOUR LB. PACKAGES and SPECIAL LOOSE-QUEEN PACKAGES cannot be shipped earlier than MAY 15th. All orders should be accompanied by payment of $1.00 PER PACKAGE, to confirm and hold shipping date, balance payable before shipping.

| PRICES—Quantity Scale: | (1 or 2) | (3 to 24) | (27 to 99) | 102 & above |
|---|---|---|---|---|
| 2-lb. package with queen ....ea. | $3.90 | $3.65 | $3.50 | $3.35 |
| 3-lb. package with queen ....ea. | 4.90 | 4.65 | 4.50 | 4.35 |

Extra Queens, Untested, $1.00, any quantity—Tested, $2.00, any quantity.
For queenless packages deduct $1.00 - For Special Loose-Queen packages, add $1.00

## THE PUETT COMPANY, Hahira Georgia

## WHAT'S FOR DESSERT

(Continued from page 82)

squares of unsweetened chocolate to hot milk. Date Tapioca: Fold in ¼ cup pitted, chopped dates before adding egg whites.

### Honey Lemon Pie

Twenty-two ginger snaps, ¼ cup softened butter, ½ cup honey, ¼ teaspoon salt, 5 tablespoons cornstarch, 1 cup water, 3 eggs, separated, ¼ cup lemon juice, 2 teaspoons lemon rind, and ¼ cup honey.

Make crust by mixing together ginger snap crumbs and butter. Press mixture evenly against sides and bottom of a nine-inch pie plate. Bake in moderately hot oven, 375 degrees F., eight minutes. Make filling by mxing together honey, cornstarch, and salt. Add water and egg yolks; stir until smooth. Cook over hot water until thick, stirring constantly. Cover: cook 10 minutes. Remove from heat; stir in lemon juice and lemon rind. Cool. Beat egg whites until stiff, then gradually beat in the ¼ cup honey. Fold into filling. Pour into pie shell. Chill.

### Honey Cornstarch Pudding

Two eggs, separated, ⅓ cup honey, ⅛ teaspoon salt, 2 cups scalded milk, and 1 teaspoon vanilla.

Add honey and salt to beaten egg yolks. Slowly stir in small quantity of scalded milk, blending well. Then stir into hot milk in double boiler, stirring constantly. Continue cooking and stirring until thick. Cover and cook 15 minutes. Add vanilla and fold in stiffly beaten egg whites. Pour into rinsed mold and chill until firm.

Aurora, Nebr.

**CARNIOLANS**
**CAUCASIANS**

Gentle, prolific, good winterers, build up rapidly during Spring. We will offer a limited number of 2-lb. and 3-lb. packages with queens, 8-fr. and 10-fr. colonies in the spring. Queens of both races in season.

**Albert G. Hann, Glen Gardner, N. J.**

**HOLLOPETER'S ITALIAN QUEENS**

Beginnng around May 15th this strain of Northern-bred queens will be ready. Untested, $1.25 each. In June, $1.00.

**WHITE PINE BEE FARMS**
**ROCKTON, PA.**
(The Home of Good Italian Queens)
Gleanings advertisers since 1911

**PACKAGE BEES!**

are necessary in your program for 1946. Sugar is going to be scarce for sometime yet and honey will still demand top prices.

To produce the maximum crop replace winter loss and fill all available equipment with **PACKAGE BEES!**

Boost wintered over colonies with queenless bees.

Supplies and labor are either on hand or available to assure you prompt service on orders placed early!

2-lb. with queen ....$3.50
3-lb. with queen .... 4.50

SATISFACTION GUARANTEED

**Rossman & Long**
P. O. Box 133, Moultrie, Ga.


## NEW METHODS OF BEEKEEPING

(Continued from page 71)

under good management and in a relatively good year.

How were the colonies handled? First, the package bees were given combs containing pollen when they were installed. When this pollen was consumed they were given cakes of soybean flour mixed with pollen whenever they needed it during late May and into June. In fact, Dr. Farrar remarked that there was a short period in late May when the package bees suffered for lack of pollen and would have done better if they had been given more "pollen" cakes.

It is hard to believe that bees suffer from lack of pollen in Wisconsin in the month of May. It just goes to show we cannot go by rules, but must watch our bees and even though they are supposed to get enough pollen in May to keep up brood rearing, they will not be able to get it if the weather is unfavorable.

Madison, Wisc.

# ANNOUNCING 1946 PRICES

On

## STOVER QUALITY BEES

Through May 20th

| Lots of: | Queens | 2 lb. | 3 lb. | 4 lb. | 5 lb. |
|---|---|---|---|---|---|
| 1 - 24 | $1.25 | $4.00 | $5.10 | $6.20 | $7.30 |
| 25 - 99 | 1.15 | 3.75 | 4.80 | 5.85 | 6.90 |
| 100 - up | 1.05 | 3.50 | 4.50 | 5.50 | 6.50 |

After May 20th

| Lots of: | Queens | 2 lb. | 3 lb. | 4 lb. | 5 lb. |
|---|---|---|---|---|---|
| 1 - 24 | $1.10 | $3.85 | $4.95 | $6.05 | $7.15 |
| 25 - 99 | 1.00 | 3.60 | 4.65 | 5.70 | 6.75 |
| 100 - up | .90 | 3.35 | 4.35 | 5.35 | .6.35 |

**Orders booked without Deposit**
**Queens Postpaid — Packages F.O.B. Shipping Point**
**For Queenless Package Deduct Price of Queen**
**Payable in U. S. Funds**

## THE STOVER APIARIES

**Mayhew, Miss.**

## BEES & QUEENS!

**WE TAKE THIS OPPORTUNITY TO THANK OUR MANY CUSTOMERS FOR THEIR FINE PATRONAGE!**

**The Package Bee and Queen Business of the late T. W. Burleson is under the management of his son T. E. Burleson. Due to the early booking of orders for Package Bees and Polhemus Queens, we regret that no additional orders can be accepted this season!**

## T. W. Burleson & Son

**WAXAHACHIE, TEXAS**

## JENSEN'S

**Package Bees and Queens**

**Have become so much in demand that we must ask prospective buyers not to send us any more orders now for delivery in April!** Many dates are also taken in May. Already we have declined many orders, and it is a loss of time to write us—time that might enable you to get commitment from some other source of supply.

We sincerely regret we cannot supply all who have sent us inquiries and orders. In spite of our increased output of package bees and preparations for increased queen production, our output would still be inadequate to keep pace with the outlets.

Let's all hope and pray that a degree of normalcy may yet become a realization in 1946, and that our sacrifices may not have been entirely in vain. What a tragedy that our boys should have died to win a war, and we at home quarrel among ourselves and lose the peace. What kind of "Peace Loving" example is the U.S.A. setting before the nations of the world?

## Jensen's Apiaries

**MACON, MISS.**

## Package Bees and Queens for 1946

**PROGENY-TEST 3-BANDED ITALIAN STRAIN. ALSO CHARLES MRAZ'S AND OTHER RELIABLE BREEDERS' STRAIN OF HIGH QUALITY DAUGHTERS OF STOCK BRED FOR RESISTANCE.**

**Package Bees— Except for a few odds and ends to be filled in during April, as daily production fluctuates, we are filled up on Package Bee orders for APRIL!**

**Queens—Supply more ample. Strictly queen orders will be filled during April subject to certain restrictions. Please write!**

| Quantity | 2-lb. pkg. w/q | 3-lb. pkg. w/q | Queens |
|---|---|---|---|
| 1-9 | $3.70 | $4.70 | $1.10 |
| 10-24 | 3.60 | 4.60 | 1.05 |
| 25-99 | 3.55 | 4.55 | 1.00 |
| 100 and up | 3.45 | 4.45 | .95 |

**Dependability - Quality - Service**

**Garon Bee Company, Donaldsonville, La.**

## ITALIAN BEES AND QUEENS——

**OPEN DATES IN APRIL AND MAY**

10 per cent books your order balance 10 days before shipping.

| | Queens | 2-lb. pkg. | 3-lb. pkg. |
|---|---|---|---|
| 1-25 | $1.20 | $3.75 | $4.75 |
| 25-up | 1.10 | 3.50 | 4.50 |

**BAYOU BEE COMPANY** Raymond Viguerie, owner

**BOURG, LOUISIANA**

## ITALIAN BEES

**Package Bees with Queens**

**2-lb. package with queen $3.50**
**3-lb. package with queen 4.50**
**4-lb. package with queen 5.50**

Satisfaction guaranteed. 20% down to book order.

**Bunkie Bee Farm**

**R. F. D. 2, Box 85, Bunkie, La.**

## ITALIAN BEES and QUEENS

**Live Delivery Guaranteed!**
**20% to book orders early.**
**No C. O. D.**

**Oscar Arnouville**
**Hamburg, La.**

## HELP FOR YOU . . .

**is available in daughter queens of "DR" stock which has been improved yearly by scientific selection. It will aid you in your fight against American foulbrood. The performance of this stock is why beekeepers are placing repeat orders. Satisfaction is what you get with the use of this stock. No other stock can offer the quality of parentage, of rearing methods and of testing service.**

**SO WHY NOT GET THOSE QUEENS WHICH GIVE YOU THE GREATEST VALUE?**

Write for shipping dates. No change in prices for this season.

**Iowa Beekeepers' Association**
**State House, Des Moines 19, Iowa**

## 10,000 Packages — Italian Bees With Queens. 5,000 Extra Queens Offered During April and May.

3-lb. Packages with Queens ....$5.00

2-lb. Packages with Queens .... 4.00

By Express

Extra Queens ..... 1.25

**WE SERVE TO SERVE AGAIN!**

## SUNNY SOUTH APIARIES

MARKSVILLE, LA. I. CLARK, PROP.

---

**ITALIANS! QUEENS! CAUCASIANS!**

Daughters of Queens bred for Resistance — Bred to Italian Drones
All three races bred in separate yards.

2-lb. package bees with queen, $4.00; 3-lb. package bees with queen, $5.00
Extra Queens, $1.25 each

OVER 25 YEARS A SHIPPER IN U. S. A. AND CANADA

Sulfathiazole used in feed at no extra cost to you.

MASTER MIX POLLEN made from Soybean flour, Cottonseed meal, Brewers yeast, Skim milk, Natural pollen, Invert sugar and Sulfathiazole, 10-lb. pail, $2.50 six pails, $13.50. Send for FREE CIRCULARS.

**BLUE BONNET APIARIES, Rt. 2, Box 23, WESLACO, TEXAS**

---

## SUNKIST ITALIAN BEES AND QUEENS!

QUEENS! ! ! ! —We have choice shipping dates in April and May for straight queen orders. We can take more orders for May packages. Send us your order for choice queens and packages.

**We offer three-banded Italians. Live delivery, health certificate, satisfaction. Prompt reply. 10 per cent books your order—balance 10 days before shipping. Queens postpaid.**

**Packages express collect.**

| | Queens | 2-lb. | 3-lb. |
|---|---|---|---|
| 1 - 25 | $1.10 | $3.50 | $4.50 |
| 25 --up | 1.00 | 3.40 | 4.40 |

## SUNKIST BEE COMPANY

**Route 2, Box 9** **Houma, La.**

# York's Package Bees and Queens for 1946

## Quality Bred Italians

**No Change in Price for Coming Season**

**PACKAGE BEES WITH YOUNG LAYING QUEENS**

| Quantity | 1 to 2 | 3 to 27 | 30 to 96 | 99 up |
|---|---|---|---|---|
| 2-lb- pkgs. | $4.25 each | $4.10 each | $3.95 each | $3.75 each |
| 3-lb. pkgs. | 5.25 each | 5.10 each | 4.95 each | 4.75 each |
| Extra Queens | 1.30 each | 1.25 each | 1.25 each | 1.25 each |

**Queenless Packages, deduct $1.10 per package.**

Booking orders now for 1946, same terms and price. We thank our customers for their patronage and will be prepared to serve you better with highest quality the coming season. A large number of buyers have already placed orders for the coming season and if you have not done so, we urge you to do so without delay for better choice of shipping dates. There is every indication of an extra heavy demand. Order direct from this ad and save time.

## YORK BEE COMPANY, Jesup, Ga., U. S. A.

**The Universal Apiaries**

**YOU MUST BE SATISFIED**

**Regardless of the Reason!**

**Bees from our quality and production-bred Italian Queens will fill those supers.**

**PLENTY OF SPRING SHIPPING DATES OPEN.**

**Book Your Orders Now!**

1-24 ..... $1.10
25-up ..... 1.00

**HEART O'TEXAS APIARIES**
**WACO, TEXAS**

**WHITTLE'S**

**PACKAGE BEES AND QUEENS**
**LEATHER COLORED ITALIANS**
**are Guaranteed to Please!**

**Booking Orders now For 1946**
We have a number of open shipping dates. Do not delay, book now and be safe!

**1946 PRICES**

| | Queens | 2-lb. | 3-lb. | 4-lb. | 5-lb. |
|---|---|---|---|---|---|
| 1-24 | $1.25 | $4.00 | $5.10 | $6.20 | $7.30 |
| 25-99 | 1.15 | 3.75 | 4.80 | 5.85 | 6.90 |
| 100-up | 1.05 | 3.50 | 4.50 | 5.50 | 6.50 |

**GEO. E. WHITTLE**
**Star Route, West**
**GREENVILLE, ALA.**

# Honey Market Report

**SEMI-MONTHLY HONEY REPORT**
**United States Department of Agriculture, Production and Marketing Administration**
**Washington, D. C., January 2, 1946**

**CALIFORNIA POINTS: (Period Dec. 8-22)**

Southern California. Heavy rains from December 21-24 broke the drought which was becoming rather severe in some sections. Precipitation ranged from 3½ inches to 5¾ inches. Moisture conditions are very favorable and some early weeds are beginning to grow. In the hils most colonies are broodless and relatively inactive. In the valley areas they are obtaining some pollen and nectar from eucalyptus and mustard and are building up fairly well. Offerings of honey continue very light with most sales consisting of scattered lots from local points and some clover honey from the Rocky Mountain area. Sales generally continue at the ceiling of 12c per lb. f.o.b. to beekeepers. Beeswax is mostly selling at 41½-43½c per lb., f.o.b. to beekeepers.

Imperial Valley. Conditions are about normal in the Imperial Valley with bees generally inactive and very few plants in bloom.

Central and Northern California. Intermittent rains fell over northern and central California during this period. Seasonal precipitation to date is above normal at most points, with the result that honey plants for next season are in unusually good condition. In central California many colonies are in normal strength while others have rather small clusters and are light in stores. In northern California colony condition is generally somewhat less favorable. Some colonies appear to be wintering satisfactorily but many are very weak and unusually light in stores or are actually being fed. There is some movement of bees in both sections to the early spring deciduous locations. Only small quantities of honey remain in producers' hands. Many packers and dealers are rationing honey to their customers in order to extend supplies as far as possible. Sales f.o.b. shipping point, per lb., northern California Light Amber Mixed Flowers and Amber Cappings and central California Extra Light Amber to White Cotton, 12c. Beeswax, 41½c per lb., f.o.b. to beekeepers.

**PACIFIC NORTHWEST: (Period Dec. 8-22)**

At the beginning of this period temperatures were lower than normal with considerable snow in the higher altitudes and sleet in the Willamette Valley. Toward the end of the period temperatures advanced with heavy warm rains which melted the snow in the mountains and caused one of the worst floods in many years in the Willamette Valley. No damage to bees has been reported from this as most hives were moved to high ground. In western Oregon and Washington bees are wintering well and have been able to make short flights.. In the Willamette Valley filberts are producing pollen. An occasional dandelion is in bloom. At present the spring season appears earlier than usual. East of the Cascades there was also heavy rainfall with higher temperatures and melting snows in the mountains. Honey supplies continue light, with demand far in excess of the available supplies.

**INTERMOUNTAIN REGION: (Dec. 9-23)**

This period was generally cold in most sections of the Intermountain Region, but not especially unfavorable for wintering since bees in this region are prepared for low temperatures and heavy snows. Very ltle honey remains in this section. In some localities practically the entire crop was shipped to cooperatives this year. Sales


**CARNIOLANS**
**PACKAGE BEES WITH CARNIOLAN QUEENS!**
2-lb. bees with queen, $4.00; 3-lb. bees with queen, $5.00.
Over 24 packages, deduct 25c each package.
We offer 2000 packages. APRIL DELIVERY.
**EPHARDT HONEY FARMS, Plaucheville, Louisiana**



**ANNOUNCEMENT!**

Having been absent for the seasons 1942 through 1945, due to overseas service in the Armed Forces, I have now returned to our business, and trust that we will have the pleasure of again serving our old customers, together with many new ones. **Thanks!**

**QUALITY — RAPID, HONEST SERVICE**
**10% deposit books your order on remaining open shipping dates.**

**3-BANDED ITALIAN QUEENS & PACKAGES**

| | 1-24 | 25-99 | 100-up |
|---|---|---|---|
| Queens | $1.10 | $1.05 | $1.00 |
| 2-lb. and queen | 3.90 | 3.80 | 3.70 |
| 3-lb. and queen | 4.90 | 4.80 | 4.70 |

NOTE: For queenless packages, deduct price of queen. For 4-lb. and 5-lb. packages, write for prices. Small RUSH ORDERS filled by wire on 100% deposit on open shipping dates only. FULL BALANCE DUE ON ACCOUNT required 10 days in advance of shipment of all orders.

**EELLS HONEY & BEE COMPANY, Houma, La., U. S. A.**
**(In the Sunny South)**

f.o.b. shipping point, per lb., extracted clover-alfalfa in case to ton lots few sales, 12c, in 60's 15c, in 5-lb. pails few 18c

COLORADO. Most of Colorado had very cold weather during this period, with considerable snow in the higher mountains. Bees went into the winter in good condition and with ample stores in most instances so should be wntering satisfactorily to date. Although some beekeepers, especially on the western slope, report more dead bees on the bottom boards and in front of the hives than is normal in this period.

**SOUTHWESTERN AREA: ((Dec. 10-25)**

EAST TEXAS. The weather was very cold with rains during this period. Condition of honey plants appears above normal. Most colonies have an abundance of stores, but some are rather weak in bees. Indications are that help will be more plentiful for package bee and queen producers next spring.

LOWER RIO GRANDE VALLEY. This section is very dry and only a few wild flowers are in bloom. Bees are obtaining a little pollen. Most colonies with ample stores have a little brood in from one to three frames. Bees are in generally fair condition, from the standpoint both of bees and stores. Some beekeepers plan to feed lightly soon after the first of the year to stimulate early brood rearing and get bees in condition for the early fruit bloom.

Practically all honey is out of the producers' hands. Orders for package bees and queens are being booked rapidly.

**ARIZONA: (Period Dec. 9-23)**

In the Salt River Valley recent rains have relieved semi-drought conditions and crop prospects for 1946 are somewhat better than they were a few weeks ago. This period was generally cold with considerable freezing weather. In southeastern Arizona cold weather has retarded bee activity with the result that the quantity of stores consumed to date has been small. This section is badly in need of moisture. In the Salt River Valley reports indicate that some beekeepers plan to move to other sections to get away from heavy losses from crop dusting.

**PLAINS AREA: (Period Dec. 11-25)**

RED RIVER VALLEY OF MINNESOTA and NORTH DAKOTA. The early part of this period was very cold with temperatures dropping to 20 degrees below and in some cases lower and holding at these levels for some time. A deep blanket of snow, however, protected honey plants and in most cases gave good protection to hives. At the end of the period temperatures moderated to around the freezing point. There seems to be some increase in demand on the part of beekeepers in this section for package bees to increase colony numbers next spring. small lots of honey remain but most large lots have already moved out of the territory, Sales f.o.b. shipping point, per lb. - extracted clover, in case to ton lots 12c in 60s few 15c. Beeswax, 42½c per lb. f.o.b. to beekeepers.

IOWA. Considerable sub-zero weather occurred during this period. Some sections have a fairly heavy snow cover. In others the snow cover is relatively light. Bees have had no flight during this period, but are in good condition since in nearly all cases they were very strong n young bees last fall and have heavy winter stores. Demand for honey has been very heavy with a fairly good portion of the crop being packed locally and sold in consumers' containers. Sales f.o.b. shipping point, per lb. - extracted clover, in case to ton lots 12c, in 60s 15c, in 5-lb. pails and glass jars mostly around 18¼c, some low as 16c.

**EAST CENTRAL AND NORTH CENTRAL STATES: (Period Dec. 12-26).**

MICHIGAN. Practically all of Michigan is covered with a fairly heavy blanket of snow. Since this was preceded by heavy rains in all sections honey plants should be in unusually favorable condition at this time. Temperatures have fallen to around zero on most nights during this period, but have usually risen into the 20s during the day, which should make for very favorable wintering of bees unless the cold should continue for an unusual length of time. On the upper peninsula cellar-wintered bees are in extremely good condition. No large lot sales of honey were reported and most of the supplies remaining are being packed and sold locally by beekeepers. Sales f.o.b. shipping point, per lb. - extracted clover, in 5-lb. pails few sales 19¼c.

**NORTHEASTERN SECTION: (Dec. 13-27)**

NEW YORK. The weather was unusually cold during this period with temperatures ranging considerably below zero at some points. Some sections of the state, especially in extreme western and northeastern New York, have had heavy snowfall and all sections have had sufficient to protect honey plants. All indications point to good wintering of colonies so far. Honey supplies are becoming light in the hands of most beekeepers, although some fairly large lots still remain over the state and some packers have accumulated fairly good reserves.

## SUMMARY

### Report of January 15, 1946

The extremely cold weather which blanketed almost the entire country in late December moderated during the period of December 22 - January 8. Weather was generally mild and in some cases temperatures in the 60s were reported. Rains were fairly general over most of the country except in north central Montana and portions of Wyoming, Nebraska, Kansas, Colorado, and northern New Mexico. Heavy rains averaging over two inches fell along the coastal areas of Oregon and Washington and northern California. Those states along the Gulf of Mexico northward through Tennessee also reported heavy rainfall. Reports indicate that soil moisture is generally about normal and the condition of honey plants ranges from fair to excellent. In the northeastern and north central sections, however, mild temperatures and rain removed the protective snow cover and there is considerable concern for many plants should a heavy freeze occur at this time. Most bees apparently came through the extreme cold in good condition with only slight losses. There are some reports of heavy consumption of stores, feeding being necessary. Generally, reports indicate that bees are wintering better than during any of the past few seasons.

The demand for honey continues very heavy in most sections. Practically all supplies have moved from hands of producers and only occasional light offerings are reported. A few packers and cooperatives apparently have some honey reserves, but many are either rationing to extend supplies or are now completely sold out. Most sales continue at ceiling levels with a few indications of sales at prices above the ceiling.

From the South package bee and queen producers report an unusually good demand from the northern states for spring shipments of bees and queens. Reports from the northern states also bear out the general belief that many beekeepers are intending to increase their colonies. Lumber shortages have created a scarcity of hives in some sections, and hives along with various beekeeping material and supplies may be difficult to obtain during the coming season.

## POLLEN SUBSTITUTES!

**NOW IS THE TIME TO START FEEDING POLLEN SUBSTITUTES!**

**Large numbers of progressive beekeepers are feeding their bees pollen substitutes. Beekeepers report that bees dive into this like a hog dives into a slop bucket. Bees must have pollen to grow young bees. Don't risk weak colonies due to shortage of pollen; try at least some pollen substitute this year. We sell small and large lots, the cost is very low and it takes practically no time to feed it in the dry form.**

### WRITE FOR OUR NEW CIRCULAR

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**The A. I. Root Company, Publishers, Medina, Ohio**